002

American Cyanamid Company Industrial Chemicals Division P.O. Box 2228 3309
Kalamazoo, MI 49003
(616) 349-6677

January 27, 1982

Mr. Richard G. Simms, P. E. Wastewater Superintendent Department of Public Works 1415 North Harrison Street Kalamazoo, Michigan 49007

Dear Mr. Simms:

Attached is a completed Non-domestic User Survey Form covering the operations of this plant as requested in your letter of November 24, 1981.

Process descriptions as requested under Section II 2, have not been provided because we feel this information is sensitive and confidential. Knowledge of our processes by competitors would be extremely disadvantageous to our business.

If after review of the information provided in the survey form you feel that the process descriptions are needed, please request this information in writing. Then, the process descriptions will be submitted to you on a confidential basis.

The listing of raw materials handled to answer Section V 1., is being submitted separately as confidential information for the reasons above.

If other questions arise as you review the survey form, please advise.

Very truly yours,

AMERICAN CYANAMID COMPANY

Gerald R. Backlund

Plant Manager

GRB/pp

Attachments

# CONFIDENTIAL

## RETURN COMPLETED FORMS TO :

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007



SURVEY FORM

## NON-DOMESTIC USER SURVEY FORM

I. GENERAL IN ORDER TO	I.	. GENER	RAL	INF	ORM/	OITA	V
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	AMERICAN CYANAMID COMPANY	KALAMAZOO PLANT
	Corporate Name	Plant Name
	ONE CYANAMID PLAZA	2715 MILLER ROAD
	Address - Street and Number	Address - Street and Number
	WAYNE, NEW JERSEY 07470	P.O. BOX 3309 KALAMAZOO, MICHIGAN 49003
	City Zip Code	City Zip Code
		616-349-6677
		Plant Phone Number
	JOSEPH M. KYNE PLANT CHEMIST	616-349-6677 Ext. 267
	Name and Title of Person Completing Report	Phone Number
	The information contained in this questionna of my knowledge and belief, such information	
		PLANT MANAGER
	Date Signature of Responsib	ole Official Title
	GERALD R. BACKLUND	Posnonsikla Official
	Print or Type Name of R	Responsible official
1.	Nature of business: Manufacture of industria	al chemicals for use in the coating,
••	paper and water treating industries.	,
	(Sala) (Sala) (Sala) (Sthern (Sala)	
_	(2810) (2860) (2890) Other	. (222)
2.	Write the appropriate Standard Industrial Co	de (SIC) in the box above.
3.	What types of waste(s) do you discharge to t	he sanitary sewer?
	A. X Sanitary B. X Wash W	ater C. X Rinse Waters
	D. X Cooling Water E. X Proces	s Waters F. 🗓 Scrubber Waters
	G. X Other Stormwater Runoff (See Attac	hment)
4.	Do you use, store or discharge any acids, ba	ses or materials listed in Table I?
	A. (x)Yes B. (No	
5.	Does the operation of your processes or wast	ewater treatment facility result
	in a residual residue or sludge type waste?	
	A. (x)Yes B. (_)No (SEE ATT	ACHMENT)

AMERICAN CYANAMID COMPANY

0.	3CI	nedule of operations:					
	Α	99 <u>Nu</u> m	ber of employ	ees.			
	В	24 hrs/day 5-	<sup>7</sup> days/wk	3	_shifts/day	12	_mos/yr
7.	Α.	If you answered only A to of survey form.	question thr	ee(3), sig	n and return t	his port	ion
	В.	If you answer to question through VIII of this form				Section	II
II.	PRO	Kalam 1415	Eldred, Indus azoo Wastewat N. Harrison azoo, Michiga	er Treatme	eillance Techn nt Plant	ician	
n		Provide a complete list of on Table I (the consolidation tants List). If you use list contents on the packename(s) at this time. You OSHA Form 20 for each such information when available EPI PCB HYPO (158)	ted Critical I trade name or age, indicate u must also wi h substance ar e, i.e., use r	Materials I proprieton the trade rite the ma nd provide	List and Prior ry chemicals wh name(s) and ma anufacturer to POTW with the	ity Poll hich do anufactu request necessa	u- not rer's an ry
Laborato	ory	MeCl TOL XYLENE					
Quantit: Only	2.		d sheets if ne	eeded):T	his is confide	ntial in	formation
			*				
						<del></del>	
	3.	A. X Yes B. The process information and	No C. If y	es, explai	n what and why to 40 CFR Part	/ (all re 2):	
		knowledge of this informat	ion by our com	petitors w	ould be disadv	antageou	s.
	4.	Water Supply: A. X Muni	icipal B. 🔀	◯Well C.	Other, e	explain_	
		D. Consumption Used: A.  (Estimated) B.1: Consumption Total: 1:	10,000 gallons	per day (	ft <sup>3</sup> , gals per ft <sup>3</sup> , gals per		
	5.	Does your facility have a Program (SPOC) CFR 112 or MDNR Rule five (5).					3
		A. XYes B. N	lo				

### AMERICAN CYANAMID COMPANY

III.	PROCESS	WASTEWATER

1.	Identify outfalls (circle):
	A. Surface waters. Name of receiving waters:  B. Septic tank-file field.  C. Surface of ground.  Municipal sanitary sewer.  E. Storm sewer.  Other, describe IMPOUNDMENTS - SEE ATTACHMENT (include line drawing(s) of process flows and all floor drain discharging to each outfall)  SEE - ATTACHMENT
2.	Volumes of discharge: A. Average Daily Flow:gallon per day  B. Maximum Daily Flow:gallon per day  C. Flow is:Measured (Estimated
3.	Type of wastewater:
	A. % Process 10 B. % Cooling 85 C. % Sanitary 5 D. % Other
4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?  A. $X$ Yes B. $N$ No If yes, estimate area drained $39,000$ sq. ft.
V. <u>DI</u>	SPOSAL PRACTICES (add extra pages if necessary)
1.	How do you dispose of spent chemicals (explain)? SEE ATTACHMENT
2.	A. Volume Disposed of:  How do you dispose of spoilage (explain)? SEE ATTACHMENT
3.	How do you dispose of precipitates and/or sludges (explain)? SEE ATTACHMENT
	A. Volume Disposed of:
4.	Name of waste hauler: SEE ATTACHMENT License No.
5.	Do you have pretreatment for your wastes? A. $(x)$ Yes B. $(x)$ No*
	If box A is checked: Type: pH Adjustment, solids settling  Size: Impounds 3 + 4 - 25,000 yds <sup>3</sup> Alum Impounds-30,000yd
	Frequency of Operation: CONTINUOUS
	If box B is checked, where and how are the wastes disposed of?
	To sanitary sewer x * To storm sewer
	Industrial Waste Hauler Other
•	If other, explain
	* Effluent from the Methylated Resins Dept. and the Organic Flocculants Dept.

# - 4 - NON-DOMESTIC USER SURVEY FORM AMERICAN CYANAMID COMPANY

6.		you have any air emission control equipment which would discharge to the er system?  A. XYes  B. No
7.	Are	any of the materials listed in Table I discharged with the wastes?
٧.		X Yes B. No  List by number from Table I: 33 (158) ( ) ( ) ( ) ( )  LL PREVENTION (add extra pages if necessary)
		List bulk materials stored on site (liquid, solids), (including cleaning agents). SEE ATTACHMENT.
		Material: Volume: Location in plant:
		Material: Volume: Location in plant:
	2.	Is separate secondary containment provided for bulk materials?  A. Yes B. No C. X Some  Those on the Michigan critical materials register.
	3.	A. ()Yes B. ()No C. (X_)Some materials register.  Is separate secondary containment provided for those processes which contain chemicals listed in Table I?
		A. XYes B. No
	4.	Has separate storage been provided for those chemicals which cause hazardous reactions, i.e., acid with cyanide, acids with bases?
VI.	SAMI	A. XYes B. No PLING AND ANALYSIS
	1.	Are sampling points available for each:
		A. Process Line X Yes No  B. Outfall X Yes No
	2.	Do you sample your process discharge(s)? X Yes No
	3.	Type of sample A. Grab B. X Composited  If Box B is checked, is sample composited to A. Flow B. X Time
	4.	Is a sampling vault and/or manhole provided?  A. XYes B. No
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.): Samples of each outfall are taken daily (5 days a week), composited, and analyzed on
		a weekly basis.
	6.	What laboratory analysis (wastewater/solids) can be run on site? pH, Total
		suspended solids, Chemical oxygen demand, Total nitrogen gas chromatography.

### VII. MISCELLANEOUS

Describe any safety precautions to be observed by those visiting at your site: Visitors Must Wear - Hard hat Splash Proof goggles and		
safety glasses.	Other protective measures may be required depending on t	:he
tasks being done	All visitors must register with the receptionist and b	e
accompanied by a	Cyanamid employee while on the plant site.	
Contact Person:	Name Gerald R. Backlund	
	Title Plant Manager	
	Phone Number 616-349-6677	

### NON-DOMESTIC USER SURVEY FORM

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

### ATTACHMENTS

### Section I

- 3.G. The elevation of the west side of the plant causes stormwater runoff to drain into impounds Number 3 and Number 4. This includes the area north and west of Buildings 2 and 3 totalling about 39,000 square feet. Effluent collected in these impounds is settled and adjusted in pH before transfer to the Kalamazoo Wastewater Treatment Plant.
- 5. Impounds Number 1, Number 1-A, and Number 2 are used for the settling and collecting of unreacted silica from manufacture of aluminum sulfate. The unreacted silica is referred to as alum muds. These muds are collected in the impound and are not discharged into the sanitary sewer.

**3** 

### Section III

1. F. The unreacted silica from alum manufacture is transferred to the alum impounds by slurrying with water. The alum muds settle in the impounds and the supernatant water is returned to the alum process. Excess stormwater collected in the alum impounds is transferred to the Specialty Chemicals impounds for pH adjustment before transfer to the Kalamazoo Wastewater Treatment Plant.

Effluent from the Specialty Chemicals Department is collected in the Specialty Chemicals impounds before transfer to the Kalamazoo Wastewater Plant. Settling of solids and adjustment of pH is done before discharge to the municipal sanitary sewer.

2. Volumes of Discharge: To Municipal Sanitary Sewer To Impoundments

	Average Daily Flow	112,000 GPD	10,800 GPD
_	Maximum Daily Flow Flow is	238,000 GPD measured	24,400 GPD estimated

#### Section IV

- 1. Spent chemicals are not a frequently occurring problem. Small amounts of nonhazardous spent chemicals are dissolved in water and discharged to the municipal sanitary sewer via the Specialty Chemicals impounds. All RCRA hazardous chemicals are shipped off-site for disposal using a licensed disposal contractor.
- 2. Off-grade products are disposed of in various ways. Some are recovered by blending into specification grade products. Since most of our products are non-hazardous polymers and used in water-treating applications, some are diluted in water and discharged to the municipal sanitary sewer via the Specialty Chemicals impounds. Occastionally, some of the melamine formaldehyde resins are overreacted and set up as a solid. These resins are flushed to the Specialty Chemicals impound where they settle as hard solids.
- 3. The unreacted silica remaining from manufacture of aluminum sulfate is collected in the Alum impounds as alum muds. These muds are collected in the impounds and removed every second year. The alum muds are classified as a non-hazardous Type II waste and these solids are shipped to an approved Type II Landfill. The volume removed is about 13,000 cubic yards every second year.

The solids collected in the Specialty Chemicals impounds are polymer solids originating from the processing of paper chemicals and water treating chemicals. Analysis indicates that there are no hazardous constituents present. The solids in the Specialty Chemicals impound have never been removed.

# ATTACHMENTS continued

### Section IV - continued

### 4. Name of Waste Hauler:

Hazardous Wastes: A-l Disposal Corporation

P. O. Box 248 400 Broad Street

Plainwell, Michigan 49080 EPA I.D. Number: MID059695452

Alum Muds: Harold Hosner, Inc.

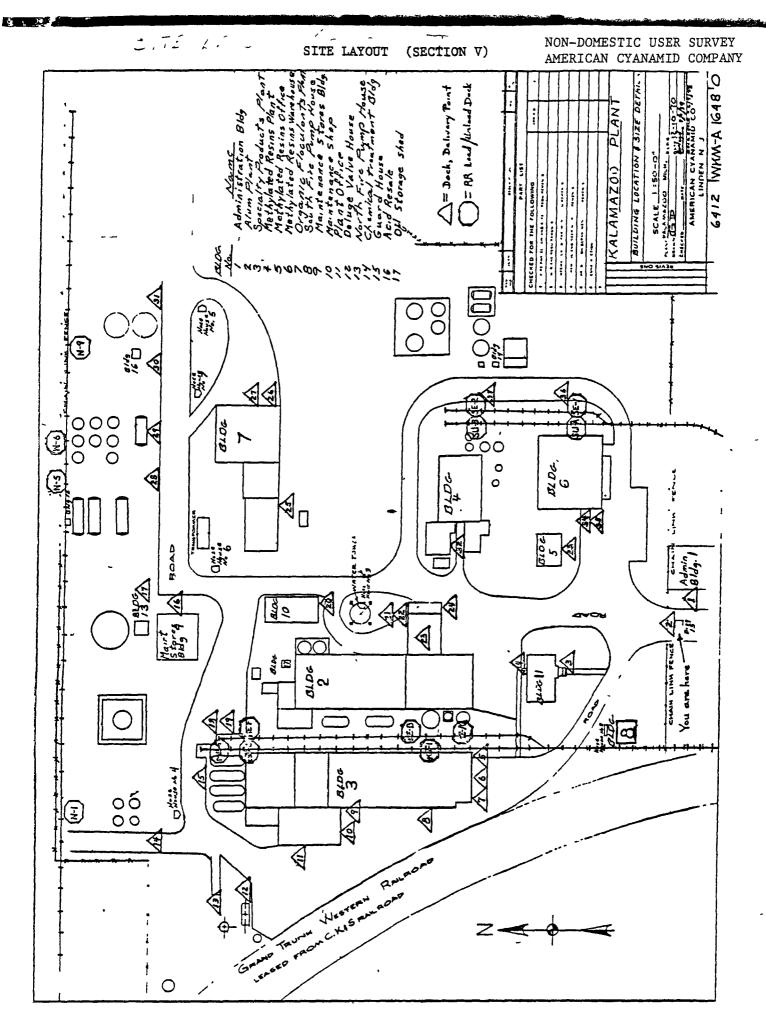
R.R.1, Box 153J

Bloomingdale, Michigan 49026

### Section V

### 1. Bulk Material Storage

FINISHED PRODUCTS	AMOUNT STORED	LOCATION IN PLANT (See Attached-Site Layout)
		(See Altached-Site Layout)
CYTOX C-140	550 Gal (Drums)	Bldg 3 Warehouse
E-1006	1,500 Gal (Drums)	Bldg 3 Warehouse
CYAF 5117	300 Gal (Drums)	Bldg 3 Warehouse
CYAF 5119	1,000 Gal (Drums)	Bldg 3 Warehouse
CYAF 5137	200 Gal (Drums)	Bldg 3 Warehouse
CYANAMER P-70	12,000 Gal Bulk	Bldg 3 Warehouse
CYANAMER P-35	20,000 Gal Bulk	Bîdg 3 Warehouse
CYANAMER P-34	1,000 Gal (Drums)	Bldg 3 Warehouse
Poly DADM	25,000 Gal Bulk	Bldg 3 Warehouse
Melamine/Formaldehyde	25,000 Gal Bulk	Bldg 3 Warehouse
PAREZ/ACCOSTRENGTH	6,200 Gal Bulk	Bldg 3 Warehouse
	1,000 Gal (Drums)	Bldg 3 Warehouse
Aluminum Sulfate (Alum)	500 Tons Bulk	Bldg 2 NE Side
Solution PAMS	90,000 Gal Bulk	Bldg 7 Tank Farm
Polyamines	72,000 Gal Bulk	Bldg 7 Tank Farm
Poly DADM	25,000 Gal Bulk	Bldg 3 Warehouse
CYMEL 303	100,000 Gal Bulk	Bldg 4 Tank Farm





American Cyanamid Company Polymer Products Division P.O. Box 3309 Kalamazoo, MI 49003 (616) 349-6677

April 20, 1987

Ms. Jean Eldred Industrial Services Supervisor 1415 North Harrison Kalamazoo, Michigan 49007

Dear Ms. Eldred:

A revised copy of the non-domestic user survey for the American Cyanamid Company Kalamazoo Plant is attached. The NDUS submitted in 1982 has been revised to reflect the current operations in the plant. In addition, a copy of sewer lines and spill protection in the plant and brief descriptions of processes have been included at your request.

The significant differences in this survey and the previous survey are elimination of alum production, addition of Cyrez adhesion promoter manufacture, addition of butylated resin manufacture and groundwater remediation. Spill protection in the plant has been significantly improved since the 1982 NDUS was submitted.

The survey revisions are contained in the NDUS form and Attachment 1. Process descriptions are contained in Attachment 2. Spill protection and sewer lines are contained in the attached figure.

If you have any questions concerning this submission, please contact me or Dr. R. L. Greene.

This submission and any past or future discussions or communications regarding this matter are not intended to admit any fact or liability or to waive or affect any rights.

Very truly yours,

AMERICAN CYANAMID COMPANY

Anton C. Marek Plant Manager

RLG/bjr

Attachments

### NON-DOMESTIC USER SURVEY FORM

I.	GE	NERAL INFORMATION	
		ERICAN CYANAMID COMPANY rporate Name	KALAMAZOO, MICHIGAN PLANT Plant Name
		E CYANAMID PLAZA dress - Street and Number	2715 MILLER ROAD Address - Street and Number
		YNE, NEW JERSEY 07470 ty State Zip	P.O. Box 3309  KALAMAZOO, MICHIGAN 49003  City State Zip
			616-349-6677 Plant Phone Number
		pert L. Greene Technical Superne and Title of Person Completing	erintendent 616-349-6677 - Ext 295 ng Report Phone Number
	the		s questionnaire is familiar to me and to ef, such information is true, complete
	Dat	Unter (1)	Plant Manager
	Dat	e signature of k	esponsible Official Title
			C. Marek Responsible Official
	1.		cture of industrial chemicals for use in and waste treating industries.
		( <u>2860) (2890)</u> Other(	)()()
	2.	Write the appropriate Standar above.	d Industrial Code (SIC) in the box
	3.	What types of waste(s) do you	discharge to the sanitary sewer?
			ash Water C. (X) Rinse Waters rocess Waters F. )X) Scrubber Waters ff (See Attachment)
	4.	Do you use, store or dischain Table I?	rge any acids, bases or materials listed
		A. (X) Yes B. ( ) No	0
	5.	Does the operation of your facility result in a residual :	processes or wastewater treatment residue or sludge type waste?
		A (X) Yes B. ( ) No	o (SEE ATTACHMENT)

### NON-DOMESTIC USER SURVEY FORM AMERICAN CYANAMID COMPANY

	6.	Schedule of Operations:
		A. 120 Number of Employees.
		B. 24 hrs/day 5-7 days/wk 3 shifts/day 12 mos/yr
	7.	A. If you answered only A to question three (3), sign and return this portion of survey form.
		B. If you answer to question three (3) is other than A, complete Section II through VIII of this form, sign it, and return to:
		Jean Eldred, Industrial Surveillance Technician Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007
II.	PRO	CESS AND PRODUCTS
	1.	Provide a complete list of products used or stored on the site which appear on Table I (the consolidated Critical Materials List and Priority Pollutants List). If you use trade name or proprietary chemicals which do not list contents on the package, indicate the trade name(s) and manufacturer's name(s) at this time. You must also write the manufacturer to request an OSHA Form 20 for each such substance and provide POTW with the necessary information when available, i.e., use numbers NOT chemical name, Table I:
Labora Quanti	etory	EPI PCB* HYPO IN ACIDS TOL**  (33) (127) (158) (167) (139) ( ) ( ) ( ) ( )  y MeCL TOL XYLENE s- (78a) (139) (149) ( ) ( ) ( ) ( ) ( )
Only * - or	n-si	te transformers
**- fr		remediation Describe each process (add sheets if needed): This is confidential information.
	3.	Is any of the enclosed information considered to be confidential?  A. ( X ) Yes B. ( ) No C. If yes, explain what and why (all requests for confidentiality will be processed according to 40 CFR Part 2): The process information and the material handled are confidential because knowledge of this information by our competitors would be disadvantageous.
	4.	Water Supply: A. (X) Municipal B. (X) Well C. ( ) Other, explain -
		D. Consumption Used: A. 280,000 gallons/day (ft <sup>3</sup> , gals/time unit) (Estimated) B. 110,000 gallons/day (ft <sup>3</sup> , gals/time unit) Consumption Total: 390,000 gallons/day
		Does your facility have a Spill Prevention Control and Counter Measure Program (SPCC) CFR 112 or a Pollution Incident Prevention Plan (PIPP) MDNR Rule five (5).

A. (X) Yes B. ( ) No

# NON-DOMESTIC USER SURVEY FORM American Cyanamid Company

### III. PROCESS WASTEWATER

	1.	Identify outfalls (circle):
		A. Surface waters. Name of receiving waters:  B. Septic tank-file field.  C. Surface of ground.  D. Municipal sanitary sewer.  E. Storm sewer.  F. Other, describe - IMPOUNDMENTS - SEE ATTACHMENT (include line drawing(s) of process flows and all floor drain discharging to each outfall).
	2.	Volumes of discharge: A. Average Daily Flow: 172,000 gallon per day B. Maximum Daily Flow: 238,000 gallon per day C. Flow is: ( ) Measured ( ) Estimated
	3.	Type of wastewater:
		A. % Process <u>25</u> B. % Cooling <u>65</u> C. % Sanitary <u>5</u> D. % Other
	4.	Are drains (roof, parking lot, etc) discharging into the sanitary sewer?  A. (X) Yes B. () No If yes, estimate area drained 39,000 sq ft
IV.	DIS	POSAL PRACTICES (add extra pages if necessary)
	1.	How do you dispose of spent chemicals (explain)? SEE ATTACHMENT 1 A. Volume Disposed of:
	2.	How do you dispose of spoilage (explain)? SEE ATTACHMENT 1
	3.	How do you dispose of precipitates and/or sludges (explain)? SEE ATTACHMENT 1 A. Volume Disposed of:
	4.	Name of waste hauler: SEE ATTACHMENT 1 License No
	5.	Do you have pretreatment for your wastes? A. (X) Yes B (X) No*
		If box A is checked: Type: pH adjustment, solids settling Size: Impounds 3 & 4 - 35,000 yds <sup>3</sup> , Alum Impounds - 30,000 yds <sup>3</sup>
		Frequency of Operation: CONTINUOUS
		If box B is checked, where and how are the wastes disposed of?
		To sanitary sewer (X)* To storm sewer () Industrial Waste Hauler () Other ()
		If other, explain

<sup>\*</sup> Effluent from the Methylated Resins Department and the Organic Flocculants Department are discharged directly to the municipal sanitary sewer.

# NON-DOMESTIC USER SURVEY FORM American Cyanamid Company

	6.	Do you have any air emission control equipment which would discharge to the sewer system? A. (X) Yes $B.$ ( ) No
	7.	Are any of the materials listed in Table I discharged with the wastes? A. (X) Yes B. ( ) No
		C. List by number from Table I: (33) (158) ( ) ( ) ( )
٧.	SPI	ILL PREVENTION (add extra pages if necessary)
	1.	List bulk materials stored on site (liquid, solids), (including cleaning agents). SEE ATTACHMENT
		Material: Volume: Location in plant:
		Material: Volume: Location in plant:
	2.	Is separate secondary containment provided for bulk materials?  A. ( ) Yes B. ( ) No C. (X) Some - All raw materials and most finished products.
	3.	Is separate secondary containment provided for those processes which contain chemicals listed in Table I? A. (X) Yes B. ( ) No
VI.	SAM	PLING AND ANALYSIS
	1.	Are sampling points available for each:
		A. Process Line (X) Yes () No B. Outfall (X) Yes () No
	2.	Do you sample your process discharge? (X) Yes ( ) No
	3.	Type of sample. A. ( ) Grab B. (X) Composited  If Box B is checked, is sample composited to: A. ( ) Flow B (X) Time
	4.	Is a sampling vault and/or manhole provided? A. (X) Yes B. ( ) No
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.):
		Samples of each outfall are taken daily (5 days a week), composited, and analyzed on a weekly basis.
	6.	What laboratory analysis (wastewater/solids) can be run on site?
		pH, total suspended solids, chemical oxygen demand, ammonia by specific ion electrode, nitrates.

# NON-DOMESTIC USER SURVEY FORM American Cyanamid Company

### VII. MISCELLANEOUS

1. Describe any safety precautions to be observed by those visiting at your site: Visitors must wear hard hat, splash-proof goggles and safety glasses. Other protective measures may be required depending on the tasks being done. All visitors must register with the receptionist and be accompanied by a Cyanamid employee while on the plant site.

2. Contact Person: Name: Anton C. Marek
Title: Plant Manager

Phone Number: 616-349-6677

### NON-DOMESTIC USER SURVEY FORM

PRETREATMENT: The treatment of a wastewater contribution, at the point of

origin, prior to release to a public sewer or collection

system.

PROCESS WATERS: Waters that come in contact with an end product or with

materials incorporated in an end product.

SAMPLE/COMPOSITE: A composite sample should contain a minimum of eight (8)

discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the

compositing period (EPA).

SAMPLE/GRAB: A sample which is taken from a waste stream on a one-time

basis with no regard to the flow in the waste stream and

without consideration of time (EPA).

SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the

secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc. should be stored within a secondary containment structure,

usually a concrete wall or earthen dike.

SPENT CHEMICALS: Chemicals that have exhausted their usefulness.

STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types

with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

### TABLE I

The following is a list of the U.S. EPA Priority Pollutants consolidated with the current Critical Materials Register compiled by the Michigan Department of Natural Resources.

### ORGANICS

	•
1.	acids
2.	
3.	acetone cyanohydrin
4.	2-acetylaminofluorene
5.	
6. 7.	
8.	
9.	<b>5</b>
10.	
11.	o-aminoazotoluene
	4-aminobiphenyl
13. 14.	3-amino-9-ethylcarbazole
15.	<pre>l-amino-2-methylanthraquin aminotriazole (amitrole)</pre>
16.	aniline
17.	aniline hydrochloride
18.	o-anisidine
19.	o-anisidine hydrochloride
20.	benz(a)anthracene
21. 22.	benzene benzidine
23.	benzidine salts
24.	benzo(a)pyrene
25.	brucine
26.	carbon tetrachloride
27.	chlorinated benzenes
27. 27.	<ul><li>a. chlorobenzene</li><li>b. 1,2,4-trichlorobenzene</li></ul>
27.	c. 1,2-dichlorobenzene
27.	d. 1,3-dichlorobenzene
27.	e. 1,4-dichlorobenzene
28.	chlorinated dibenzofurans
29. 30.	chlorinated dioxins chlorinated ethanes
30. 30.	a. 1,1,1-trichloroethane
30.	b. 1,1-dichloroethane
30.	c. chloroethane
30. 31.	d. 1,1,2,2-tetrachloroethane
	chlorinated naphthalene
31. 32.	a. 2-chloronaphthalene . chlorinated phenols
32.	a. 2-chlorophenol
32.	b. parachlorometa-cresol
32.	c. 2,4-dichlorophenol
33.	l-chloro-2,3-epoxypropane

34.

35.

36 chloroform

chloroalkyl ethers

bis(2-chloroethyl ether

```
37. bis(2-chloromethyl) ether
 38. . 3-(chloromethyl) pyridine hydrochloride
 39. 1-(4-chlorophenyl)-3, 3-dimethyl triazene
 40. 4-chloro-m-phenylenediamine
 41. 4-chloro-o-phenylenediamine
 42. chloroprene
 43. 5-chloro-o-toluidine
 44. p-cresidine
 45. 2,4-diaminoanisole sulfate
 46. 4,4-diaminodiphenyl ether
 47. 2,4-diaminotoluene
 48. dibenz (a,h)anthracene
 49. tris(dibromopropyl)phosphate
 50. di-n-butyl phthalate
 51. 3,3-dichlorobenzidine
 52. 3,3-dichlorobenzidine salts
 53. 1,2-dichloroethane
54. dichloroethylenes
54. a. 1,1-dichloroethylene
54. b. 1,2-trans-dichloroethylene
55. dichloropropane and dichloropropene
     a. 1,3-dichloropropylene;
55.
         (1,3-dichloropropene)
55.
     b. 1,2-dichloropropane
56. 1,2:3,4-diepoxybutane
57. diethyl sulfate
58. 4-dimethylaminoazobenzene
59. dimethylhydrazines
60. 2,4-dimethylphenol
61. 4,6-dinitro-o-cresol
62. 2,4-dinitrophenol
63. 2.4-dinitrotoluene
64. dinitrotoluene
64. a. 2,6-dinitrotoluene
65. di-n-octyl phthalate
66. 1.4-dioxane
67. 2,3-epoxy-1-propanal
68. ethylbenzene
69. ethylene dibromide
70. ethyleneimine
71. ethylene oxide
72. ethylene thiourea
73.
    bis(2-ethylhexyl)phthalate
74.
    ethylmethanesul fonate
75.
    fluoranthene
    2-(2-formylhydrazino)-4-(5-nitro-2-fury)-
76.
    thiazole
```

ORGANICS CONTINUED ON PAGE 2

77		116.	N-nitrosomethylvinylamine
77		117.	
77	. b. 4-bromophenyl phenyl ether	118.	N-nitroso-N-phenylhydroxyl-amine,
77		,	ammonium salt
77		119.	N-nitrososarcosine
78		120.	pentachloronitrobenzene
78			
, 0	(dichloromethane)	121.	pentachlorophenol
78		122.	peroxyacetic acid
78		123.	phenol
78 78		124.	Phthalate esters
78 78		124.	a. butyl benzyl phthalate
78 78		124.	b. diethyl phthalate
78 78		124.	c. dimethyl phthalate
		125.	piperonyl sulfoxide (DDR)
78.		126.	polybrominated biphenyls (PBB)
79.		127.	polychlorinated biphenyls (PCB)
80.		128.	polynuclear aromatic hydrocarbons
81.		128.	a. 3,4-benzofluoranthene
82.		128	<pre>b. benxo(k) fluoranthane;</pre>
83.			(11,12-benzofluoranthene)
84.	•	123.	c. chrysene
85.	•	128.	d. acenaphthylene
86.	. 5	128.	e. anthracene
87.	•	128.	f. benzo(ghi)perylene;
88.		120.	(1,12-benzoperylene)
89.		128.	g. fluorene
90.	•	128.	h. phenathrene
91.		128.	<ol> <li>indeno(1,2,3-cd)pyrene;</li> </ol>
92.		120.	(2,3-0-phenylenepyrene)
93.	1,2(methylenedioxy)-4-propenyl	128.	j. pyrene
	benzene	128.	k. naphthalene
94.	methyl hydrazine	129.	
95.	l-methylnaphthalene	130.	1,3-propane sultone
96.	2-methyl-l-nitroanthraquinone		B-proplolactone
97.	mustard gas	131. 132.	5-propyl-1,3-benzodioxole propyleneimine
98.	1,5-naphthalenediamine	133.	semicarbazide
99.	l-naphthylamine	134.	A
100.	2-naphthylamine	134.	<pre>styrene tetrachloroethylene(perchloroethylene)</pre>
101.	5-nitroacenaphthene	135.	thioacetamide
102.	5-nitro-o-anisidine	130.	4,4-thiodianiline
103.	nitrobenzene	137.	thiourea
104.	4-nitrobiphenyl	130.	
105.	nitrogen mustard		toluene
106.	2-nitrophenol	140.	o-toluidine
107.	4-nitrophenol	141.	o-toluidine hydrochloride
· 108.	Nitrosamines	142.	triaryl phosphate esters
108.	a. N-nitrosodiphenylamine	143.	1,1,2-trichloroethane
108.	<ul><li>b. N-nitrosodi-n-propylamine</li></ul>	144.	trichloroethylene
109.	N-nitroso-n-butyl-N-(4-hydroxybutyl)	145.	trichlorophenols
	amine	146.	2,4,5-trimethylaniline
110.	N-nitrosodiethylamine	147.	trimethylphosphate
111.	N-nitrosodimethylamine	148.	vinylchloride
112.	p-nitrosodiphenylamine	149.	xylene
113.	N-nitroso-N-ethylurea	00	-00 0007718450 04 0405 5
114.	N-nitroso-N-methylurea	URGAN:	ICS CONTINUED ON PAGE 3
115.	N-nitroso-N-methylurethane		
	The second meany randomand		

<u>A.</u>	INORGANICS	PEST	ICIDES (Continued)
150.	antimony	194	chlorpyrifos
151.		195.	
152.			coumaphos
153.			crotoxyphos
154.		198.	• •
155.		199.	
156.		200.	
157.	• •	201.	
158.		202.	
159.		203.	
160.		204.	
161.		205.	
162.			dichrotophos
163.			dieldrin
164.			dimethoate
	thallium	209.	dinocap
166.	zinc		dinoseb
		211.	dioxathion
В.	INORGANICS	212.	disulfoton
		213.	endosulfan
167.	acids	214.	endrin
168.	chloramines	215.	EPN
169.	chlorine		ethion
170.	hydrazine	217.	fensulforhion
171.		218.	fenthion
		219.	fluchloralin
C. I	NORGANICS	220.	heptachlor
		221.	heptachlor epoxide
172.	asbestos (fibrous)	222.	
	,	222.	a. a-BHC-Alpha
PESTI	CIDES	222.	b. b-BHC-Beta
	<del></del>	222.	
173.	aldicarb	223.	
	aldrin	224.	
	4-aminopyridine	225.	metabolites of DDT **
176.		225.	a. 4,4'-DDE;(p,p'-DDE)
177.	antimycin A	225.	b. 4,4'-DDD;(p,p'-TDE)
178.	azinphos-ethyl	226.	metabolites of endosulfan
179.	azinphos-methyl	226.	a. endosulfan sulfate
180.	barban	227.	metabolities of endrin
181.	bendiocarb	227.	a. endrin aldehyde
182.	benomyl	228.	metabolites of heptachlor
183.	bromoxynil	228.	a. heptachlor epoxide
184.	2(p-tert-butylphenoxy)-isoprophyl-	229.	methomy1
	2-chloroethyl sulfite	230.	methoxychlor
185.	captafol	231.	methyl mercaptan
186.	captan	232.	methyl parathion
187.	carbaryl	233.	mevinphos
188.	carbofuran	234.	mexacarbate
189.	carbophenothion	235.	mirex
190.	chlordane	236.	monocratophos
191.	chlordecone	237.	naled
192.	chlorfenvinphos	238.	nicotine
193.	chlorobenzilate	239.	nitrofen
		240.	oxydemeton-methyl
			and a series a single

## PESTICIDES (Continued)

241.	paraquat
242.	parathion
243.	phorate
244.	phosazetim
245.	phosmet
246.	phosphamidon
247.	rotenone
248.	silvex, propylene glycolbutyl
	ether ester
249.	sodium fluoroacetate
	strychnine
251.	sulfallate
252.	sulfotepp
253.	TDE
254.	TEPP
255.	terbufos
256.	tetrachlorvinphos
257.	thiram
258.	
259.	trichlorfon
260.	trichlorophenoxyacetic acid
	(2,4,5-T)
261.	trifluralin
262.	ziram

## ATTACHMENT A

## STANDARD INDUSTRIAL CLASSIFICATION CODES

Note: This is an edited list.

Code Title
MANUFACTURING (Continued)
2080 Beverages 2082 Malt Beverages 2084 Wines, brandy, and brandy spirits 2085 Distilled liquor, except brandy 2086 Bottled and canned soft drinks 2087 Flavoring extracts and sirups, nec.
2090 Misc. Foods and Kindred Products 2091 Canned and cured seafoods 2092 Fresh or frozen packaged fish
2200 TEXTILE MILL PRODUCTS
2300 APPAREL AND OTHER TEXTILE PRODUCTS
2400 LUMBER & WOOD PRODUCTS 2420 Sawmills and Planing Mills 2430 Millwork, Plywood & Structure Members
2440 Wood Containers 2448 Wood pallets and skids 2450 Wood Buildings and Mobile Homes 2491 Wood preserving 2492 Particleboard 2500 FURNITURE AND FIXTURES
2300 FURNITURE AND FIXTURES
2600 PAPER AND ALLIED PRODUCTS
2611 Pulp mills 2621 Paper mills except building paper 2631 Paperboard mills 2640 Mics. Converted Paper Products
2640 Misc. Converted Paper Products 2650 Paperboard Containers and Boxes 2661 Building paper and board mills
2700 PRINTING AND PUBLISHING 2710 Newspapers 2750 Commercial Printing 2790 Printing Trade Services 2800 CHEMICALS AND ALLIED PRODUCTS
2810 Industrial Inorganic Chemicals 2820 Plastics Materials & Synthetics 2830 Drugs 2840 Soap, Cleaners, and Toilet Goods 2850 Paints and Allied Products 2860 Industrial Organic Chemicals 2870 Agricultural Chemicals 2890 Miscellaneous Chemical Products 2891 Adhesives and sealants

Code Title	Code Title
MANUFACTURING (Continued)	MANUFACTURING (Continued)
2892 Explosives 2893 Printing Inks	3398 Metal heat treating
2899 Salt (by evaporation)	3400 FABRICATED METAL PRODUCTS 3410 Metal cans & shipping containers
2900 PETROLEUM AND COAL PRODUCTS 2911 Petroleum refining	3420 Cutlery, hand tools, & hardware 3430 Plumbing & heating, except electric
2950 Paving and roofing materials	3440 Fabricated structural metal products 3442 Metal doors, sash & trim
3000 RUBBER AND MISC. PLASTIC PRODUCTS 3011 Tires and inner tubes	3443 Fabricated plate work (boiler shops) 3444 Sheet metal work
3069 Fabricated rubber products 3079 Miscellaneous plastic products	3450 Screw machine products,bolts, etc. 3460 Metal forgings and stampings
3100 LEATHER AND LEATHER PRODUCTS	3462 Iron and steel forgings 3463 Nonferrous forgings
3111 Leather tanning and finishing	3465 Automotive stampings 3470 Metal services
3200 STONE,CLAY,AND GLASS PRODUCTS 3220 Glass and Glassware,Pressed or Blown	3471 Plating and polishing 3479 Metal coating and allied services
3241 Cement 3250 Structural Clay Products	3480 Ordnance and Accessories 3490 Misc. Fabricated Metal Products
3260 Pottery and Related Products 3270 Concrete, Gypsum and Plaster Products	3500 MACHINERY, EXCEPT ELECTRICAL
3271 Concrete block and brick 3273 Ready-mixed concrete	3510 Engines and turbines 3520 Farm and Garden Machinery
3274 Lime 3275 Gypsum products	3530 Construction & Related Machinery 3540 Meatworking machinery
3290 Misc. Nonmetallic Mineral Products 3291 Abrasive products 3292 Asbestos products	3550 Special Industry Machinery 3560 General Industrial Machinery 3570 Office & Computing Machines
3295 Minerals, ground or treated 3297 Nonclay refractories	3580 Refrigeration & Service Machinery 3590 Misc. Machinery, except electrical
3300 PRIMARY METAL INDUSTRIES	3600 ELECTRIC AND ELECTRONIC EQUIPMENT
3310 Blast Furnaces & Basic Steel Products 3312 Blast Furnaces & Steel Mills	3610 Electric Distributing Equipment 3620 Electrical Industrial Apparatus
3313 Electrometallurgical products 3315 Steel wire and related products	3630 Household appliances 3640 Electric lighting and wiring equipment
3316 Cold finishing of steel shapes 3317 Steel pipe and tubes	3650 Radio & TV Receiving Equipment 3660 Communication Equipment
3320 Iron and Steel Foundries 3321 Gray iron foundries	3670 Electronic Components & Accessories 3690 Misc. Electrical Equipment & Supplies
3322 Malleable iron foundries 3330 Primary Nonferrous Metals	3700 TRANSPORTATION EQUIPMENT
3331 Primary copper 3332 Primary lead	3710 Motor Vechicles & Equipment 3711 Motor Vechicles & Car Bodies 3714 Motor Vechicles & Assessing
3333 Primary zinc 3334 Primary aluminum 3340 Secondary Nonformous Metals	3714 Motor Vechicles & Accessories 3715 Truck trailers
3340 Secondary Nonferrous Metals 3360 Die Casting 3361 Aluminum foundries	3720 Aircraft and parts 3730 Ship & Board building and repairing 3740 Railroad Equipment
3362 Brass,bronze & copper foundries 3390 Misc. Primary Metal Products	3750 Motorcycles, Bicycles & Parts 3760 Guided Missles, Space Vechicles Parts

### MANUFACTURING (Continued)

3790 Miscellaneous Transportation Equipment

3792 Travel trailers & campers

3795 Tanks and tank components

3800 INSTRUMENTS & RELATED PRODUCTS

3810 Engineering & Scientific Instruments

3820 Measuring & Controlling Devices

3830 Optical Instruments and Lenses

3840 Medical Instruments and Supplies

3860 Photographic Equipment & Supplies

### 3900 MISCELLANEOUS MANUFACTURING **INDUSTRIES**

3910 Jewelry, Silverware & Plated Ware 3930 Musical Instruments

3940 Toys & Sporting Goods

3950 Pens, Pencils, Office & Art Supplies

3990 Miscellaneous Manufactures

### TRANSPORTATION

#### 4010 RAILROADS

4200 TRUCKING AND WAREHOUSING

4210 Trucking Local & Long Distance

4214 Hauling Liquid Wastes

4221 Farm Product Warehousing & Storage

4222 Refrigerated Warehousing

4230 Trucking Terminal Facilities

4400 WATER TRANSPORTATION

4430 Great Lakes Transportation

4440 Transportation on Rivers and Canals

4452 Ferries

4454 Towing and tugboat services

4460 Water Transportation Services

4463 Marine Cargo Handling

### **SERVICES**

4900 ELECTRIC, GAS & SANITARY SERVICES

4911 Electric Services

4925 Gas production and/or distribution

4953 Refuse systems

5810 EATING & DRINKING PLACES

6512 OFFICE BUILDINGS

7000 HOTELS & OTHER LODGING PLACES

7011 Hotels, motels, & tourist courts

### SERVICES (Continued)

7030 Camps and Trailering Parks

7032 Sporting and recreational camps

7210 Laundry, Cleaning & Garment Services

7215 Coin-operated laundries

7391 Laboratories-testing and research

7399 Water softener service

7500 AUTO REPAIR SERVICES & GARAGES

7530 Automotive Repair Shops

7542 Car Washes

7900 AMUSEMENT & RECREATION SERVICES

7933 Bowling alleys

7940 Commercial sports

7941 Sports clubs and promoters

7948 Racing including track operation

7992 Public golf courses

7996 Amusement parks

7997 Membership sports & recreation clubs

8000 HEALTH SERVICES

8050 Nursing and personal care facilities

8060 Hospitals

8070 Medical and Dental Laboratories

8080 Outpatient Care Facilities

## CYTEC

CYTEC INDUSTRIES INC.

P.O. Box 3309 Kalamazoo, MI 49003 Tel: (616) 349-6677

> Mr. Tim Meulenburg Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, Michigan

February 25, 1994

Dear Mr. Meulenberg:

Attached is a copy of the 1981 analyses and correspondence concerning contaminaiation in the plant water wells.

If there is any other information I can provide, please contact me.

Sincerely,

Robert L. Greene, Ph. D.

Technical Manager



To

G. R. Backlund

Date

December 29, 1981

Location

Kalamazoo, MI

Copy to

P. E. Grubb

From

J. M. Kyne

Location

Kalamazoo, MI

Subject

PLANT WATER ANALYSES (DNR & MONSANTO)

Reference

Enclosed you will find copies of the analytical reports submitted by Monsanto Research Corporation and Kar Labs on samples which were submitted for analysis in November 1981. These samples were taken as splits and concurrently with samples taken by R. Przybysz of the MDNR. Samples of water were taken from the following areas 1. Monitor Well #1A

- 2. Monitor Well #1
- 3. Monitor Well #4
- 4. Monitor Well #2
- 5. Monitor Well #3
- 6. Impound #1
- 7. Impound #3
- 8. East Drinking Water Well
- 9. West Drinking Water Well

All nine of the samples were analyzed for volatile organics and base neutral extractables. In addition the five monitor well samples were analyzed for the routine monitoring parameters: pH, COD, sulfate, nitrate, iron, and aluminum.

We will use these analyses to compare with those of the MDNR when we receive them. If you have any questions about any of the results please call me.

JMK/ok

1

Enclosure

### THE KAR LABORATORY 219 PEEKSTOK ROAD KALAMAZOO, MICHIGAN 49001

TELEPHONE (616) 381-9666

COMPANY: American Cyanamid Company	PROJECT CODE NO. K-8217					
2715 Miller Road	DATE RECEIVED: November 20, 198					
Kalamazoo, MI 49001	DATE REPORTED: November 24, 198					
ATTENTION: Mr. Jay Kyne	TYPE OF SAMPLE(S): _water					
METHOD: Standard Methods, or equivalen	nt PURCHASE ORDER NO.					
RESULTS:						

Client Sample Identification	Well -, 1	Well <b>−</b> ↑A	Well-2	Well <b>-</b> 3	Well—4
Kar Sample No.	K-8217-1	K-8217-1A	K-8217-2	K-8217-3	K-8217-4
рН	6.43	6 <b>.</b> 40	6.29	6.01	6•92
COD (mg/l)	<1.0	39.8	33.9	97.6	6.0
Sulfate (mg/l)	2,750	1,800	2,450	4,000	330
Nitrate Nitrogen(mg/l)	0.1	1.3	1.9	2.8	8.1
Iron (mg/1)	5 <b>.1</b> 4	31.4	50.0	178.6	0.71
Aluminum (mg/l)	4.6	4.6	5•0	5.1	3 <b>.</b> 0
,					
<b>:</b>					

Comments:	<del>-</del>			 -	·
•	7	<del></del>	/ 1	 <del> </del>	

John NI Karnamaat

# Environmental Services Report

Mr. Jay Kyne American Cyanamid 2715 Miller Road Kalamazoo, Michigan 49001

Date: 24 December 1981 MRC Job No. 215.4080

MRC Sample ID: 1-81-11-24-01

Written by: J. J. Brooks

CONTINUED FROM THE FRONT																
1. POLLUTANT	I. MARK 'X'				3. EFFLUENT						4. UNITS		S. INTAKE (optional)			
AND CAS NUMBER	E THEFT	2 7 # BT		and And	Me <u>thod</u>		Well #1	Well #4	Well #2	Well #3 1	d NO. OF	A CONCEN-	b MARS		TERM	N HO. OP
(if available)	• ŭ Î#-	1837	22.4	Blank	Northeast	Pond 2	by RR3	Northwest	_West	VSES	THATION		II) concun	(s) mass	YEEF.	
<b>9C/M6 PRACTION</b>	- 40	LATIL	COM	POUNDS			ļ	<del> </del>	<del> </del>	ļi						
1V. Acrolein (107-02-8)				< 200	< 200	< 200	< 200	< 200	< 200	1	µg/L					
2V. Aerylenitrile (107-13-1)				<100	< 100	<100	<100	< 100	< 100	1	μg/L					
3V. Benzene (71-43-2)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
4V. Bis (Chloro- methyl) Ether (842-88-1)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
5V. Bromoform (76-25-2)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
6V. Carbon Tetrachterida (88-23-5)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
7V. Chlorobenzene (108-90-7)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
BV. Chloredi- bromomethene (124-48-1)			ļ	< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
9V. Chlorgethane (78-00-3)		<u> </u>	ļ	< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
ethylvinyl Ether (110-75-8)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L					
11V. Chloroform (67-86-3)	ļ	ļ	<u> </u>	< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L	ļ. <u> </u>	<u> </u>		ļ	
12V, Dichloro- bromomethane (78-27-4) 13V, Dichloro-	ļ	<b> </b>		< 10_	< 10	< 10	< 10	< 10	< 10	1	μg/L	<b></b>	ļ		ļ	
difluoromethane (75-71-8)		ļ		< 10	< 10	< 10	<_10	< 10	  - ≤ 10	1	µg/L	ļ			ļ ·	
14V. 1,1-Dichloro- ethane (75-34-3)			ļ	< 10	< 10	< 10	< 10	<u> </u>	<u> </u>	1	µg/L	ļ			ļ	
18V. 1,2-Dichloro- ethane (107-06-2)	-	-	-	< 10_	< 10	10	10	10_	10_	1	nd/r		-	-	-	
16V, 1,1-Dichloro- ethylene (78-36-4)	<del> </del>			< 10	10	10_	10	<del>                                     </del>	10_	1_1_	Pg/L	-			-	
17V. 1,2-Dichloro propene (78-87-8) 18V. 1,2-Dichloro	1	_	ļ	<del></del>	<del></del>	<del>  ←10 −</del>	<del>                                     </del>	10	<del> 10</del>	1	ид/т	<del> </del>	-	ļ	-	
propylene (642-76-6)		-	<del> </del>	< 10	< 10	< 10	_ 10		10	1	μg/L				<del> </del>	
19V. Ethylbenzen  100-41-41	-	-	<del>                                     </del>	- 10 -	10	10	10	10-	10	1	μg/L		-	<del> </del>	<del> </del>	
30V, Methyl Bramide (74-83-9	4_	-	-	< 10_	< 10	< 10	< 10	< 10	< 10	1	μg/L	ļ	<del></del>	ļ		
81V. Methyl Chloride (74-87-3				< 10	< 10	< 10	< 10	< 10	< 10	1	Pg/L			DATINUE O	<u> </u>	

American Cyanamid

- 1	റാ	1 1	1	-24-
	~			~/4-

CONTINUED FROM	1 THE	FRONT	r	Amerio	can Cyanam	id			1-8	1-11-24-	01			•
I. POLLUTANT	,	MARK		<del>. به سال در ۱۳۰۰ میش</del> ور	· · · · · · · · · · · · · · · · · · ·	3. (	EFFLUENT			4. UN	ITS	B. INTAKE (optional)		
AND CAS Number	A TRET	D. 04-	C	Pond	Pond	East - Dh	West-DW	Field	d NO.OF	E. CONCEN-	b MASS	PARTYA		B NO. OF
(if available)	-01m	[ [ [ ]	ART	#6	#7	<u>Well_#8</u>	Well #9	Blank	Y 5 E 9	TRATION		TRATIOH	(1) MARG	VEER
GC/MS FRACTION	<u>- VO</u>	LATIL	E COM	POUNDS	<u> </u>			<del></del>				<b></b>		<del> </del>
1V, Acrolein (107-02 8)				< 200	< 200	< 200	< 200	< 200	1	μg/L				
2V. Acrylonitrile (107-13-1)				< 100	< 100	< 100	< 100	<sup>&lt;</sup> 100	1	μg/L				
3V, Benzene (71-43-2)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
4V. Bis (Chloro- methyl) Ether (542-88-1)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
5V. Bromoform (75-25-2)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
6V. Carbon Tetrachlorida (56-23-5)				< 10	< 10	< 10	< 10	< <u>1</u> 0	1	μg/L				
7V, Chlorobenzene (108-90-7)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
8V, Chlorodi- bromomethana (124 48-1),				< 10	< 10	< 10	· < 10	< 10	1	μg/L	1			
9V. Chloroethane (75-00 3)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
10V, 2-Chloro- ethylvinyl Ether (110-75-8)				< 10	≤ 10	< 10	<b>&lt;</b> 10	< 10	1	μg/L				
11V. Chloroform (67-66-3)				< 10	< 10	< 10	(10)	< 10	1	μg/L				
12V. Dichloro- bromomethene (75-27-4)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
13V, Oichloro- difluoromethene (75-71-8)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
14V, 1,1-Dichloro- ethane (75-34-3)				< 10	< 10	(40)	60)	<u>&lt; 10</u>	1	μg/L				
15V, 1,2-Dichloro- sthane (107-06-2)				_ 10	_ 10	_ 10	10	_ 10	1	μq/L				
16V, 1,1-Dichlorosthylene (75-35-4)				< 10	< 10	< 10	10	< 10	1	μg/L				
17V. 1,2 Dichloro propene (78-87-5)				< 10	< 10	< 10	< 10	< 10	1	Vg/I.				
18V. 1,2-Dichloro propylene (542 75 6)				< 10	< 10	< 10	< 10	< 10	1	μg/L				
19V, Ethylbenzen (100-41-4)	•			< 10	< 10	< 10	< 10	< 10	1	μg/L				
20V, Methyl Bromide (74-83 9	,			< 10	< 10	< 10	< 10	< 10	ì	μg/L				
21V. Methyl Chloride (74 87 3	,			< 10	< 10	< 10	< 10	10	ı	μg/L			ONTINUE O	

11A 2,4,6-Tri-:hiorophenol 88 06-2) EPA I.D. NUMBER (copy from Item | of Form | OUTFALL NUMBER

Form Approved OMB No. 158-R0173 CONTINUED FROM PAGE V-4 1. POLLUTANT 2. MARK 'X' 3. EFFLUENT 4. UNITS B. INTAKE (optional) AND CAS Well 1-A Well #1 Well #4 Well A LONG TERM AVERAGE VALUE ATT ST D ME. C. MA. Method Well 2 d NO OF NUMBER A. CONCEN-AVIR GENT GENT ANAL. L MASS TRATION (if available) Northeast Pond 2 By RR3 TRATION Blank Northwest West YSES (1) MARE YSES GC/MS FRACTION - VOLATILE COMPOUNDS (continued) 22V, Methylene 1 <10 <10 <10 <10 <10 <10  $\mu q/L$ Chloride (75-09-2) 23V. 1.1.2.2-Tetra chloroethane <10 <10 0.1> <10 <10 <10 1 µq/L (79.34-6)24V, Tetrachloro-<10 <10 <10 <10 1 <10 <10  $\mu_q/L$ ethylene (127-18-4) 25V. Toluene <10 <10 <10 <10 <10 1 <10 (108-68-3) hd/r 26V. 1,2-Trans-Dichioroethylene µg/L <10 <10 <10 <10 <10 <10 1 (156-60-5) 27V. 1,1,1-Trlchloroethene µg/L <10 <10 <10 <10 <10 1 <10 (71-85-6) 28V. 1,1,2-Trichloroethane <10 <10 20 <10 <10 <10 1 µq/L (79-00-5) 29V. Trichloroethylene (79-01-6) <10 <10 <10 <10 <10 <10 1  $\mu \mathbf{g}/\mathbf{L}$ 30V. Trichloroflueromethene (75-89-4)<10 <10 <10 <10 <10 <10 1 μg/L 31V. Vinyl 1 μg/L Chloride (75-01-4) <10 <10 <10 <10 <10 <10 GC/MS FRACTION - ACID COMPOUNDS 1A. 2-Chloropheno 1 (95-57-8) µg/L 2A. 2,4-Dichlorophenal (120-83-2) 1 ug/L 3A. 2.4-Dimethylphenal (105-57-9) 1 µg/L 4A. 4.6-Dinitro O-Cresol (534-52-1) 1 μg/L 5A. 2,4-Dinitro phenal (51-28-5) 1 µg/L 6A. 2-Nitrophenol (88.75.5) 1 µg/L 7A 4-Nitrophenol (100 02-7) 1 ug/Li BA. P-Chloro-M-Cresol (59-50-7) μg/L PA Pentachloroμg/L 1 shenol (87 86 5) IDA. Phenol 108-95-21 ug/L 1

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I. POLLUTANT 2 MARK X

AND CAS NUMBER (2011) Pond 3 East-DW West-DW Field

I. House a second by the second provided and the second provided provided and the second provided a

OINTINUED FACIN					والمستحددات المراجع			<u>-</u>	 		. 0,,,,,	ADDIONIU CINI	770 750 110	173		
I, POLLUTANT									 	4. UNITS 5 INTAKE (optional)						
AND CAS NUMBER	A 11 57	b mar	L BL. LIEVEC AB SENT	Pond T	Pond 3		West-DW		 ~ · · · · · · · · · · · · · · · · · · ·	* CONCEN	b MASS	A LONG	TERM	D NO OF		
til available) 3C/MS FRACTION	- VOI	ATH	E COM	POUNDS (contin	#7 ucd1	We11_#8	_Well #9_	Blank	 YSES			(I) CONTAN TRATION	(I) MARS	YSES		
							<del></del>	<del></del>	 			<b></b>				
'2V, Methylene ;hloride (75 09 2)				<10	<10	<10	<10	<10	1	μg/L						
3V, 1,1,2,2-Tetra- hloroethane 79 34-5)				<10	<10	<10	<10	· <10	1	μg/L						
4V. Tetrachloro- thylene (127 18 4)				<10	<10	<10	<10	<10	1	μg/L						
5V. Toluene 108-88-3) 6V. 1,2-Trens-				<10	<10	<10	<10	<10	1	μg/L			<del></del>			
)Ichioroethylene 156-60 5)				<10	<10	<10	<10	<10	1	μg/L						
7V. 1,1,1-Trl- hioroethane 71-55-6) 8V. 1,1,2-Tri-				<10	<10			<10	1	μg/L						
hloroethane 79-00-5)				<10	<10	<10	<10	<10	1	μg/L						
9V, Trichtoro- thylene (79-01-6) 0V, Trichtoro-				<u>~10</u>	<u> &lt;10                                   </u>	50	<10	<10	 1	μg/L				ļ		
voromethane '5-69-4)				~10	<del>~10</del>	<10	<10	<10	1	μg/L			r			
IV, Vinyl hioride (75-01-4)			<u> </u>	10	<del>~10</del>	<del>~10</del>	<del>- &lt;10</del>	<del></del>	1	µg/L				ļ		
C/MS FRACTION	- AC	D CO	MPOUN	IDS .					 l	<b> </b>	<b> </b>					
4, 2-Chloropheno 5-57-8)									 1	μg/L						
4, 2,4-Dichloro- tenol (120-83-2)			}						 1	μg/L						
1, 2,4-Dimethyl senol (105 67-9)									1	μg/L						
\ 4,6-Dinitro O esol (534-52-1)									1	μg/L			İ			
1. 2,4-Dinitro- enol (51-28-5)			<u> </u>						 1	µg/L				-		
i. 2-Nitrophenoi 3-75 5)									1	ng/L		<u> </u>	ļ	ļ		
4-Nitrophenol 30 02-7)									1	ug/L-	-			ļ		
., P-Chloro-M- rsol (59-50-7)					,				1	hd/r						
Pentachioro- enoi (87 86 5)									1	μg/L						
A. Phenol )8 95 2)									1	μg/L						
A. 2,4,6-Tri- orophenol ( 06-2)					,	- Call	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		1	μg/L	, 					

O.	N	T	11	٧	U	Œ	D	F	R	OM	ıT	Ή	ΙE	F	R	OI	N	1

I. POLLUTANT	2 (	MARK	·x·	<u>ان پر برساز اف این بین ۱۳۰۰ میدود اس فرق سی</u>	·	3. 1	EFFLUENT		,	,	4. UN	ITS	S. INT	AKE (option	- T
AND CAS Number	. 76 67	b ##-	C mg-	Method	Well 1-A	Well 1	We11 4	Well 2	Well_3_	d NO. OF	& CONCEN-	· · · · · · · · · · · · · · · · · · ·	AVERAG		L NO OF
(if evailable)	HE-	b pe-	ART		Northeast	Pond 2	by RR3	Northwest	West	ANAL-	HOITART	L MAM	(I) CONCENT	IN MARK	AMAL-
GC/MS FRACTION					Will Interest	mile and the second	HA DIVI	is a standard at the standard	A STATE OF THE STA	45 444	No. Cr. Diore	أخلاله تبيسيس	who entereday	where is not a	
1B. Asenaphthene (83-32-9)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
28 Asenaphtylena (208-96-8)				< 10	< 10	< 10	< 10	< 10	< 10	1	µg/L				
38. Anthrasens (120-12-7)				< 10	< 10	< 10	< 10	< 10	< 10	ŀ	μg/L				
48. Senzidine (92-67-5)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
58. Benzo (s) Anthracene (56-55-3)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
68. Benzo (s) Pyrene (50-32-8)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
78, 3,4-Banzq- , fluorenthene (206-99-2)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
88. Benze (phi) . Perylene (191-24-2)				< 25	< 25	< 25	< 25	< 25	< 25	1	μg/L				
98. Benzo (%) Fluoranthene (207-08-9)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
108. Ble (2-Chlore- sthory) Methens (111-91-1)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
118. Bis (3-Chloro- sthyl) Ether (111-44-4)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L			,	
128. Bis (3-Chloro- isopropyl) Ether (39636-32-8)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
138, Bis (2-Ethyl- hexyl) Phthelete (117-81-7)				< 10	< 10	10	< 10	< 10	< 10	1	μg/L	•			
148. 4-Bromo- phenyl Phenyl Ether (101-55-3)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
168. Butyl Benzyl Phthelate (85-68-7)				<u> </u>	10	<u> </u>	<u> </u>	10	< 10	1	μg/L				
165, 2-Chloro- naphthalene 91-68-7)				< 10	< 10	< 10	< 10	< 10	< 10	1	nd/r				
178 4-Chloro- shenyl Phenyl :ther (7008-72-3)				< 10	< 10	< 10	< 10	< 10	< 10	1	μg/L				
(88 Chrysene 218-01-9)				< 10	< 10	< 10	< 10	< 10	< 10	1	hā/ŗ				
198 Dibenzo (a,k) Anthracena 53-70-3)	<u> </u>			< 25	< 25	< 25	< 25	< 25	< 25	1	μg/L				
08. 1,2-Dichloro- enzene (95 50-1)				< 10	< 10	< 10	< 10	< 10	< 10	1	lg/L				
18. 1,3-Dichloro enzene (541 73 1				< 10	< 10	< 10	< 10	< 10	< 10	J	ha/r				

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1. POLLUTANT	2. /	MARK	'x' ]				EFFLUENT			4, UN	ITS		AKE (optional)		
AND CAS NUMBER	4 TE ST	D = -	C su-	Pond ]	Pond 3	East-DW	West-DW	Field	d NO. OF	IL CONCEN-	L MASS	AVERAG	YERM	6 NO OF	
				#6	#7	Well #8	Well #9	Blank	YEES	TRATION	W MASS	(I) CONCEN-	(s) mass	AMAL.	
C/MS FRACTION	- BAS	E/NEL	JTRAL	COMPOUNDS					:						
1B. Agenaphthene (62-32-9)				< 10	< 10	_ < 10	< 10	< 10	1	μg/L					
28.'Actnephtylene (208-96-8)				< 10	< 10	< 10	< 10	< 10	1	μg/L					
\$8, Anthresine (120-12-7)				< 10	< 10	< 10	< 10	< 10	1.	μg/L					
16. Senzidine (92:67-5)				< 10	< 10	<u> </u>	<u>~ 10</u>	10	1	μg/L					
18. Bento (c) hathracens 56-55-3)				< 10	< 10	10	10	10	1	μg/L					
3B. Berizd (a) Pyrane (50-32-8)				< 10		<u> 10</u>	10	10	1	μg/L		·			
18, 3,4-Benzo- Tupranthens 206-99-2)				< 10	< 10	< 10	< 10	< 10	1	μg/L					
B. Senze (ghi) erylene 191-24-2)				< 25	< 25	< 25	< 25	< 25	1	μg/L					
IB, Berro (A) Iuoranthene 207-08-9)				< 10	< 10	< 10	< 10	< 10	1	μg/L					
08. Ble (3-Chlore- thory) Methane 111-91-1) 18. Ble (3-Chloro-			<b></b>	< 10	< 10	< 10	< 10	< 10	1	μg/L			L		
thyl) Ether 111-44-4)		<u> </u>		< 10	< 10	< 10	< 10	< 10	1	μg/L			,		
28. Bis (3-Chloro- lopropyl) Ether 29638-32-0) 38. Bis (5-Ethyl-				< 10	< 10	< 10	< 10	< 10	1	µg/L		<u> </u>		ļ	
ezyl) Phthelete 117-81-7)		<u> </u>	<u> </u>	< 10	< 10	< 10	< 10	< 10	1	μg/L					
henyl Phenyl ther (101-55-3)				< 10	< 10	< 10	< 10	< 10	1	µg/L					
56. Butyl Benzyl hthelate (85-68-7 66. 2-Chloro-				< 10	< 10	< 10	√ < 10	< 10	1	μg/L		-		-	
aphthelene 31-58-7)				≤ 10	< 10	< 10	<del>  &lt; 10</del>	<u> </u>	1	nd/r		-		1	
78. 4-Chloro- henyl Phenyl ther (7005-72-3)				< 10	< 10	<del>10</del> ≺ 10	10	10	1	ha\r	<del> </del>	-			
88. Chrysene 218-01-9) 98. Olbenzo (a,h)	,	ļ		< 10	<u> </u>	<del>- 10</del>	10-	<del></del>	1	ha\r	<b></b>				
nthracen# (3-70-3)	<u> </u>	ļ	ļ	< 25	< 25	< 25	< 25	< 25	1	hg/r				ļ	
08. 1,2-Dichloro enzene (95-50-1)				< 10	< 10	< 10	< 10	< 10	1	hg/L					
19. 1,3-Dichloro inzene (541-73-1	1			< 10	< 10	< 10	< 10	< 10	l	pg/L					
1 F 1510 2C												~	NTINUE OF	ALDANE M.	

EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER CONTINUED FROM PAGE V-4

Form Approved OMB No. 158-R0173

L BOLLINGED PROMPTION VI								<del></del>				4. UNITS S. INTAKE (uptional)					
I. POLLUTANT				11-11	7		EFFLUENT		UST TO		4. UN	1178		AKE Joptie	<del>,                                    </del>		
NUMBER (if evelleble)	ING ING	00 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	42.	. Method Blank,		1-A reast	Well #1 Pond 2	FixeTT-#4	Well #2 Northwest	.Well #3 West	d NO OF ANAL YSES	A. CONCEN-	<b>&amp;</b> MA96	AVERAGE (I) concan	YALVE_	D HO.OF ANAL- VIEB	
OC/MS FRACTION		A					10114 2 181		1					THATION	***	<del>                                     </del>	
228. 1,4-Dichloro- benzene (106-46-7)				< 10	< 10		< 10	< 10	< 10	< 10	1	μ <b>g/L</b>	<del></del>				
238. 3,3'-Dichlore- benzidine (91-94-1)				< 10	< 10	0	< 10	< 10	< 10	< 10	1	μ <b>g/L</b>					
248, Diethy) Phthelate (84-06-2)				< 10	< 10	0	< 10	< 10	< 10	< 10	1	μ <b>g/L</b>					
268, Dimethyl Phthelese (131-11-3)				< 10	< 11	0	< 10	< 10	< 10	< 10	1	μg/L					
268. DI-N-Butyl Phthelate (84-74-2)				< 10	<u> </u>	0	< 10	< 10	< 10	< 10	1	μg/L					
278. 2,4-Dinitro- toluene (121-14-2)				< 10	-5.14	0	< 10	<_10	< 10	< 10	1	μg/L					
298, 2,6-Dinitro- toluene (606-20-2) 288, DI-N-Octyl			<u> </u>	<u>&lt; 10</u>	1-4-1	0	<-10	_< 10	< 10	< 10	1	μg/L					
Phthelete (117-84-0) IOS. 1,2-Diphenyt-		-		<u>≤ 10</u>	<del></del>	0	<u> </u>	<u> </u>	< 10	< 10	1	η <b>g/</b> Γ				-	
nydrazine (es Azo- lenzene) (122-68-7 318. Fluorenthene			-	_ 10	1	0	_ 10	_ 10	< 10	<u> 10</u>	1	ng/L					
(208-44-0)	-	-		< 10	< 1	0	< 10	< 10	< 10	< 10	1	па/Г	<del></del>			-	
(26-73-7)		<del> </del>	-	< 10	< 1	0	< 10	< 10	< 10	< 10	1_1_	na\r				-	
hiorobenzene (118-71-1) 948. Hexe-			ļ	< 10	< 1	0	< 10	< 10	< 10	< 10	1	μg/L				-	
shlorobutadene 37-68-3) 168. Hexachlere- ryolopensadiena		-	-	< 10	< 1	0	< 10	< 10	< 10	< 10	1	μg/L	 	<del> </del>			
77-47-4) 168. Hexachlers-	-	-	-	< 10	<u>  &lt; 1</u>	<u> </u>	< 10	< 10	< 10	< 10	1	μ <b>g/L</b>			}	<del> </del>	
thene (67-72-1) 178, Indeno 1,2,8-ed) Pyrene	<del>                                     </del>	+	-	< 10	1		<u>&lt; 10</u>	< 10	< 10	< 10 < 25	1	μg/L	<u> </u>			-	
193-38-6) 88. (sepherene 78-86-1)	<del> </del>	-	<del> </del>	< 25	< 2		< 25 < 10	< 10	< 10	< 10	1	nd/r				-	
98. Nephthelene 31-20-3)	<del>                                     </del>	<del> </del>	-	< 10	< 1		< 10	< 10	< 10	< 10	1	I/Bh		<del>                                     </del>		1	
08. Nitrobungan 98-98-3)	1			< 10	< 1		< 10	< 10	< 10	< 10	1	hg/r					
18. N-Nitro- admethylemine \$2-75-8)				< 10	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		< 10	< 10	< 10	< 10	n	ug/L					
28. N-Mitrosodi Propylamina 121-04-7)				< 10	\ \ \ \ \ \		· < 70	< 10	< 10	< 10	1	μg/L					

American Cyanamid

EPA I.D. NUMBER (copy from Item 1 of Form 1) OUTFALL NUMBER

CONTINUED FROM	PAG	E V-6		,				1-01	-11-24-01		Approved OM	WALL THE						
1. POLLUTANT		MARK 'X'				EFFLUENT			4. UN	ITS	5. IN	TAKE Jupin	h NO OF					
AND CAS NUMBER	. 78 87	h.e. c.	. Pond	Pond 3	East-DW	West-DW	Field	d NO 01	. CONCEN		A LONG	TERM	h NO OF					
(If available)	BUIN-	D. BE- C. B	#6	#7	Well #8	Well #9	Blank .	ANAL.	HOITART	b, MASS	(I) CONCEN							
GC/MS FRACTION	– BA	SE/NEUTR	AL COMPOUNDS	(continued)														
22B. 1,4-Dichloro- benzene (106-46-7)			< 10	< 10	< 10	< 10	< 10	1	μg/L	-								
23B, 3,3'-Dichloro- benzidine (91-94-1)			< 10	< 10	< 10	< 10	< 10	1	μg/L									
248. Diethyl Phthelate (84-66-2)			< 10	< 10	< 10	< 10	< 10	1	μg/L		,							
255. Dimethyl Phthalate (131-11-3)			< 10	< 10	< 10	< 10	< 10	1	μg/L									
268. Di-N-Butyl Phthelete (84-74-2)			< 10	< 10	< 10	< 10	< 10	1	μg/L									
27B. 2,4-Dinitro- toluene (121-14-2)			< 10	< 10	< 10	< 10	< 10	1	μg/L									
28B. 2,6-Dinitro- toluene (606-20-2)		·	< 10	< 10	< 10	< 10	< 10	1	μg/L				J					
298. DI-N-Octyl Phthelate (117-84-0)			< 10	< 10	< 10	< 10	< 10	1	μg/L	<u> </u>			ļ					
108. 1,2-Diphonyl- tydraxino (os Azo- tenzene) (122-66-7)			< 10	< 10	< 10	< 10	< 10	1	μg/L				·					
316. Fluorenthene (206-44-0)			< 10	< 10	< 10	< 10	< 10	1	na/r		<del></del>	ļ	-					
32 8. Fluorene (86-73-7) 338. Hexe-			< 10	< 10	< 10	< 10	< 10	1	ng/L			<u> </u>						
phiorobenzene (118-71-1) 348, Hexe-		<del>                                     </del>	< 10	< 10	< 10	_ 10	_ 10	1	μg/L		<u> </u>							
shiorobutadiene 87-68-3) 35 B. Hexechloro-		-	< 10	< 10	< 10	< 10	< 10	1	μg/L									
:yalopentadiene 77-47-4)		-	< 10	< 10	< 10	< 10	< 10	1	μg/L		<u> </u>	<del> </del>	<u> </u>					
ISB. Hexachloro- nhane (67-72-1)		-	< 10	< 10	< 10	< 10	< 10	1	μg/L		<b>_</b>	<del> </del>	-					
1,2,3-cd) Pyrene 193-39-5)		1	< 25	< 25	< 25	< 25	< 25	1	µg/L		-	<del> </del>						
88. (sophorone 78-59-1)	ļ		< 10	< 10	< 10	< 10	< 10	1	na/r	ļ	<b>_</b>	_						
198. Naphthalene 91-20-3)			< 10	< 10		< 10	< 10	1	J\Eu									
0B. Nitrobenzene 98-95-3) 1B. N-Nitro-	<b> </b>	-	< 10	_ 10	10	10	10	1	μg/L			-						
odimethylamine 82-75-9) 28. N-Nitrosodi-			< 10	< 10	< 10	< 10	< 10	1	µg/L	<b></b>		ļ	-					
1-Propylamine 821-84-7)			< 10	< 10	< 70	< 10	< 10	1	μg/L	<u> </u>								

ntinued from	THE	FRON	<u> </u>												
POLLUTANT	<b>a</b> . (	MARK	'X'			3, (	EFFLUENT				4. UN	ITS	S, INT	AKE (aptia	mal)
AND CAS Number	# TR BT	th sai	C 00.		Wellst-A		Well #4	Well #2		ANAL	A. CONCEN- THATION	b MASS	AVERAGE	TERM	b NO.DF
					Northeast	Pond 2	by RR3	Northwest	West	VSES			fil concen-	1/) wase	ANAL-
AM FRACTION	- BA	SE/NE	JTRAL	COMPOUNDS	(continued)			<b> </b>					<b>}</b> }		<b> </b>
B. N-Nitro- liphenylemine i-30-6)				<10	<10	<10	<10	<10	<10	1	μg/L				
B. Phononthrone i-01-8)				<10	<10	<10	<10	<10	<10	1	μg/L				
B. Pyrane 19-00-0)				<10	<10	<10	<10	<10	<10	1	μg/L				
8. 1,2,4 - Tri- lorobenzene 10-82-1)				<10	<10	<10	<10	<10	<10	1	μg/L				
IME FRACTION	- PE	TICID	ES					·							
. Aldrin 18-00-2)										1	μg/L				
G-BHC '9-84-6)										1	μ <b>g/L</b>				
β-8HC 8-85-7)										1	μg/L				
7-BHC										1	μg/L				
8-sHC 8-68-8)										1	μg/L				
Chlerdane 74-8)										1	μg/L				
4,4'-DOT 89-8)				,						1	µg/L			<del></del>	
4,4'-DDE 68-8)										. 1	μg/L				
8,4'-000 94-8)										1	μg/L				
Dieldrin 37-1)										1	μq/L				
G-Endoulfon -29-7)										1	μ <b>q/L</b>				
β-Endosulfen -28-7)										1	μg/L				
Endosulfan		1	1	1	<del> </del>	<del>                                     </del>			1	1 -	, <u> </u>	· ·	1		1
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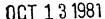
### NOV IZ 1981

			P. E. GRUBB
То:	Ms. S. B. Conklin	Date <sup>.</sup>	November 3, 1981
Location.	Kalamazoo	Copy to	J. H. Beeman KZ
From	G. R. Backlund		T. R. Forsch KZ ✓ P. E. Grubb KZ
Location.	Kalamazoo		J. M. Kyne KZ K. L. Massimine NA
Subject:	WATER SUPPLY TO LOCKER ROOM		S. B. Saheb KZ B. G. Sarratt ' KZ
Reference:			F. S. Wilber WA

The plant well water was found to contain small quantities of chlorinated hydrocarbons upon analysis of samples early this summer and the Michigan Department of Public Health recommended that our well water not be used for drinking. As a result of further inquiry to the Department of Public Health, the state recommended that municipal water be provided for all use by personnel including washing and showering.

An estimate of the capital cost required to pipe municipal water to the points of personnel service have been completed. estimated cost is \$14,700. It is desired to complete this work promptly, so that municipal water can be made available at the main locker room as soon as possible. Accordingly, the Management of the Specialty Polymers Department has given verbal approval for this expenditure. Please assign temporary job order number 22-8186 to collect charges on this job until formal job order approval. A job order request will be prepared and forwarded for approval by November 20, 1981.

Approved by: King Will





**/** 

To:

All Employees

Date:

October 12, 1981

Location:

Kalamazoo

Copy to:

B. S. Clark

NA

From:

G. R. Backlund

P. E. Grubb K. L. Massimine KZ NA

Location:

Kalamazoo

Subject:

WELL WATER FOR SHOWERING

Reference:

As reported to you in our notice of July 9, 1981, the plant well water was found to contain small quantities of chlorinated hydrocarbons. The Michigan Department of Public Health recommended that our well water not be used for drinking.

We recently made further inquiry to the Department of Public Health. They report that the compounds detected are capable of being absorbed through the skin, but there is little or no data available on health risks associated with skin absorption. Their recommendation is that we provide municipal water to water outlets used for drinking, domestic use and showers.

As a result, all employees are advised to discontinue using the showers in the main locker room. Those wishing to use the showers are to use the ones in the Organic Flocculant or Methylated Resins buildings. To avoid congestion see your supervisor to determine which location would be better.

Plans are underway to tie the main locker room in to the municipal system. As soon as this is done, the showers in the main locker room will be reactivated. The showers in the Organic Flocculant Department and the Methylated Resins Department are already on the municipal system,

G. R. Backlund



I copy to : In F. F. Shilly

Wester moderations bysica

RECEIVED

1981 118 VIUM

P E. GRUBB

American Cyanamid Company Wayne, NJ 07470

November 2, 1981

Division of Water Supply
Bureau of Environmental and Occupational Health
Michigan Department of Public Health
3500 N. Logan
P. O. Box 30035
Lansing, MI 48909

Attention: Ms. Sheryl T. Dible

Subject: Water Supply Contamination

Reference: Your letter of 7 October 1981 to Mr. Jay Kyne,

same subject

Dear Ms. Dible:

The water-treating chemicals produced at our Kalamazoo plant are either drypowders, aqueous solutions, or emulsions. Regardless of physical form, these products are used at the parts per million level in the treatment of potable water.

Analyses of water from the East and West wells at our Kalamazoo plant which were carried out by your department found the values outlined in Table I. Two of the values, i.e., trichloroethene in the East well, and l,l-dichloroethene in both wells, exceed the USEPA "Significant No Adverse Response Levels (SNARLS)" criteria established for these compounds.

To determine whether the levels of these and other chlorinated organic compounds found in the well water constitute a health hazard, I have calculated the maximum possible levels of the chemicals in treated potable water, based upon the maximum water content of our products and the maximum dose levels recommended by the USEPA, using a worst-case scenario, as follows.

Maximum water content of water-treating solution chemicals: 90% Maximum water content of water treating emulsion chemicals: 70% Maximum USEPA-recommended dose level: 150 parts per million (ppm)

Table I: Maximum Pollutant Levels in Kalamazoo Plant Wells Water (State of Michigan Analyses)

POLLUTANT	STATE OF MICHIGAN	ANALYSES	"SNARL" CRITERIA
	EAST WELL (#1)	WEST WELL (#2)	(1 Cavern/10 <sup>6</sup> persons)
(1) 1,1-DICHLOROETHANE	7 ppb	29 ppb	No guideline
(2) 1,2-DICHLOROETHANE	Non-detectable	l ppb	l ppb (assumed
			carcinogen)
(3) 1,1,1-TRICHLOROETHANE	2 ppb	5 ppb	18 ppm
(4) 1,1-DICHLOROETHENE	l ppb	l ppb	0.035 ppb (assumed carcinogen)
(5) TRICHLOROETHENE	14 ppb	3 ppb	4.5 ppb (assumed carcinogen)

Table II: Maximum Pollutant In Kalamazoo Plant Products

### MAXIMUM CONCENTRATION IN WATER-TREATING CHEMICALS \*

Well #1 (East)

Well #2 (West)

POL	LUTANT	5	SOLUTION	EMULSION	SOLUTION	EMULSION
	l,l-Dichloroethane l,2-Dichloroethane	,	6.3	4.9	20 0.9	15.4 0.7
	1,1,1-Trichloroethene		1.8	1.4	4.5	3.5
	1,1-Dichloroethene		0.9	0.7	0.9	0.7
(5)	Trichloroethene		12.6	9.8	2.7	2.1

<sup>\*</sup> Concentrations in parts per billion (ppb).

Table III: Maximum Pollutant Levels In Treated Water (Dosage = 150 parts per million)

		Well #1	(East)	Well #2 (	West)
POLLUTANT	"SNARL" CRITERION	SOLUTION	EMULSION	SOLUTION	EMULSION
Numbered as in prededing table	3				
(1) (2) (3) (4) (5)	No guideline 1 ppb 18 ppm 35 ppt** 4.5 ppb	0.945 ppt N.D. 0.27 ppt 0.135 ppt 1.89 ppt	0.21 ppt	3 ppt 0.135 ppt 0.675 ppt 0.135 ppt 0.405 ppt	2.3 ppt 0.105 ppt 0.525 ppt 0.105 ppt 0.315 ppt

<sup>\*\*</sup> ppt = Parts per trillion

In each case, the <u>maximum</u> pollutant level is several orders of magnitude <u>below</u> the applicable "SNARL" criterion. On the basis of these calculations, there appears to be no health-related reason to discontinue the use of water from these wells in the production of water-treating chemicals.

If you have any questions, please do not hesitate to call me (201/831-3021). If you cannot reach me, please call Mr. Richard B. Tabakin, Manager of Environmental Affairs (201/831-3996).

Very truly yours,

Frederick D. Timmons, Jr. Manager, Product Safety Chemicals Group

cc: G. Backlund - KZ
(Ms) B. S. Clark - NA
T. DeLong - NA
M. A. Friedman - NA
J. Kyne - KZ
K. Massemine - NA
C. A. Ruibal - NA
R. B. Tabakin - NA

STATE OF MICHIGAN

RECEIVED

9 1981

10/9/81 Copies P.E.Gabb GR Backland (2)

R. Chalmers

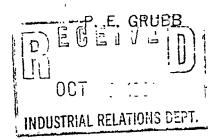
WILLIAM G. MILLIKEN, Governor

RB. Talakin

R. G. Palletier DEPARTMENT OF PUBLIC HEALTH

3500 N. LOGAN P.O. BOX 30035, LANSING, MICHIGAN 48909

October 7, 1981



0CT

American Cyanamid Company 2715 Miller Road Kalamazoo, Michigan 49001

Attention: Mr. Jay Kyne, Plant Chemist

Subject: Water Supply Contamination

Dear Mr. Kyne:

This letter is written in response to your recent inquiry concerning water used for showers at American Cyanamid. I contacted David Wade, Ph.D., Toxicologist Consultant, Division of Environmental Epidemiology, Michigan Department of Public Health, to obtain data on health effects of using water containing organic chemical contaminants at the concentrations detected in the water serving American Cyanamid. According to Dr. Wade, all of the organic compounds detected are capable of being absorbed through the skin. There is little or no data available on health risks associated with absorption of these chemicals through the skin.

It is advised that American Cyanamid provide an acceptable water supply to all water outlets used for drinking and domestic use, including showers. Since municipal water is an available alternative, it should be utilized. The municipal supply is being routinely monitored for organic and inorganic chemicals. Organic chemicals have been found in parts of the distribution system for the City of Kalamazoo, in concentrations slightly above the detection limit. Steps are currently being taken to control and eliminate the problem.

In reviewing the groundwater contamination problem affecting the wells at American Cyanamid, questions have arisen concerning the use of water from the affected wells for the production of chemicals used in water treatment. As discussed October 5, 1981, please notify this office of any such use, and steps taken to monitor the quality of these products with relation to the contaminants found in the well water.

American Cyanamid Company Page 2 October 7, 1981

Please contact this office if questions or problems arise regarding this matter. Telephone: (517) 373-1376.

Sincerely,

Sheryl T. Dibie

Environmental Sanitarian
Division of Water Supply
Bureau of Environmental and
Occupational Health

STD:ak

cc: Mr. Roger Pryzbysz, Water Quality Division, District #3, Department of Natural Resources

cc: Mr. Andrew Hogarth, Groundwater Compliance and Special Studies,
Department of Natural Resources

cc: Mr. John Hesse, Chemicals and Health Center, Department of Public Health

cc: Mr. Joe Lovato, Ground Water Quality Control Section,
Department of Public Health

cc: Kalamazoo County Health Department



To:

Ms. B. S. Clark

Date:

September 17, 1981

Location:

Wayne

Copy to:

J. C. Caparossi

NA

From:

G. R. Backlund

P. E. Grubb J. M. Kyne KZ

J. M. Kyne K. L. Massimine KZ NA

Location.

Kalamazoo

Subject:

WELL WATER ANALYSES

Reference:

Memo GR Backlund/KL Massimine 8/14/81

Attached is a copy of further analyses of well water samples completed by the Michigan Department of Public Health. These follow-up analyses were done after the detection of low levels of chlorinated hydrocarbon solvents in samples of the well water examined previously.

> J.R. Backlund G. R. Backlund 1951

GRB/bjr

Attachment

#### STATE OF MICHIGAN



WILLIAM G. MILLIKEN, Governor

### DEPARTMENT OF PUBLIC HEALTH

3500 N. LOGAN P.O. BOX 30035, LANSING, MICHIGAN 48909

September 9, 1981

Mr. Jim Akers Kalamazoo County Health Department 418 W. Kalamazoo Avenue Kalamazoo, Michigan 49007

Subject: American Cyanamid water supply contamination, Section 25,

Kalamazoo Township, Kalamazoo County

Dear Jim:

Enclosed are the results of the July 21, 1981, sampling of the American Cyanamid water supply well. The water supply was analyzed for inorganics including metals (Ni, Fe, Cr, Mn, As, Pb, Cd) and organic chemicals including phenolic compounds, polyhalogenated biphenols (PCB, PBB), phthalates, C-46, -56, -58, and -66, and pesticides. You will note that the results indicate that these compounds were not present above levels of laboratory detection. It would appear that at this time volatile halogenated hydrocarbons are the primary contaminants involved in the American Cyanamid area.

I have not received a copy of the results of your residential water supply investigation from our laboratory. I would appreciate your sending a copy of these results for our file. Jay Kyne, American Cyanamid, will receive the results of July 21 by copy of this letter.

Sincerely,

Joseph Lovato, Geologist

Ground Water Quality Control Section

Division of Water Supply

Bureau of Environmental and Occupational Health

JLL:pa

Enclosures

cc: Roger Pryzbysz, Water Quality Division, District #3, MDNR Andy Hogarth, Groundwater Compliance, MDNR ✓Jay Kyne, American Cyanamid Sheryl Dible, Water Supply Division, MDPH Chemicals and Health Center, MDPH

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STATE OF MICHIGAN TO: P.E. GRU3B



WILLIAM G. MILLIKEN, Governor

### DEPARTMENT OF PUBLIC HEALTH

3500 N. LOGAN P.O. BOX 30035, LANSING, MICHIGAN 48909

September 9, 1981

L'élè l'ita

Mr. Jim Akers Kalamazoo County Health Department 418 W. Kalamazoo Avenue Kalamazoo, Michigan 49007

American Cyanamid water supply contamination, Section 25,

Kalamazoo Township, Kalamazoo County

Dear Jim:

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I have not received a copy of the results of your residential water supply investigation from our laboratory. I would appreciate your sending a copy of these results for our file. Jay Kyne, American Ovanamid, will receive the results of July 21 by copy of this letter.

Section Section

Joseph Lovato, Geologist Ground Water Quality Control Section Division of Water Supply Bureau of Environmental and Occupational Health

JLL:pa

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Enclosures

cc: Roger Pryzbysz, Water Quality Division, District #3, MDNR Andy Hogarth, Groundwater Compliance, MDNR √Jay Kyne, American Cyanamid Sheryl Dible, Water Supply Division, MDPH Chemicals and Health Center, MDPH

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. Réason for Analysis sheek [] Routine [	Other (Describe on separa	ate sheet)
inady Ower	vamid	Phone No.
Amenican CyAliample Collected of Street Address 1. 27/5 Million	Township.	Section No:
Sample Collected at Pear Office (MI), Zip Code	County:	imazos
CA/amazoo		×
Sample Collected by 'no-o'  S. Evause	(4-7) HR MIN	may Zy 8:11
Sampling Point (circle   Source (circle). 7. Well, surface water	1 -	-Depth (ft.)Diam. (in.)
Faucet, pump, corp k-p + the		
B. Otheck and complete following line only if samp		
Name of Supply 9.	WS5N (14-20)	Sample Type (21)
LAB ID (22-26) 00001 DO NOT WRITE BELOV	W-LABORATORY RESULTS	ılt (31-34)
Acid Extrac acid extract. le pheno	+	
(*Unless otherwise - ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '	Lang R. A. A.	Examiner
AUG 261991 8 🛒	Bureau of Disease Control MICHIGAN DEPARTMEN	y Director I and Laboratory Service

REV.

2,4850,6

UL D. 23	M 3: 02	2651	67	Jr. 23 /H 3	02	1 2
Give all known int & Controller	EFICE OF Black ink.	LAB NO.	Give all known into we are	Y I I I I I I I I I I I I I I I I I I I	Chief or black ink	LAB NO
	OVATO	Phone Na:	1. Report Results to	JOE COL		Pho
Street Address /ibf			Street Address	MUBPH		31
Post Office State Zip Cc 4+	•		Post Office State - Zip Code	,,,,,,,,		
2. Reason for Analysis and Burne	Other (Describe on sepa	arate sheet)	2. Reason for Am	1,	Other (Describe on sep	parate sheet)
Supply Owner Ame; 1(1:1)		Phone No.	Supply Owner Are		nAmid	Ph
Sample Collected or 30	Township	Section No.:	Sample Collected of 1		Township	S
2715 Mille.			1. 2715 Mill	۷ .		
Somple Collected in Proceedings 1, 5-16	County:	/	Sample Collected at Park 1	· w In Cole	County	2/Amn
Sample Collected by	Time -24 hr. Fo	(A7) 1 7 700 Primat Date: (8-13)	Sample Collected by 'm-	•	Time — 24 hr. Fo	
Kinus	(4-7) HR MI	7777	6. Brause		(4.7) HR M	" MO7
Sampling Point is complete to the same of	Well No Age (yrs)	Depth (ft.) Diam. (in	Sampling Point (cret	Jan 1966	Well No Age (yrs	)—Depth (ft
Faucet, pump co pito; +15.	-°'' Frist		Faucet, pump cc p + ; • · · •		EAST	
	sampling a public water supp	ly.	8. Check and co-1 1	1 ' - 0 0 1' , if wamp	ling a public water sup	ply.
Name of Supply	WSSN (14-20)	Sample Type (21)	Name of Supply		WSSN (14-20)	Sample
V. LAB ID (22-26) 00000 :	BELOW LABORATORY RESULT	5	LAB ID (22 26) 000C1	C. METERION	LABORATORY RESUL	I I
Code (27-30)		sult (31-34)	Code (27-30)	.45		esult (31-34)
Potassius /.	Mg 31.3	Ca 102.3		_	_	
[RON::		2651	$1 N_{i} \sim$	0.03	As	<0.00
SOUTH			7		713	•
VITRATE (10 %)			F€ .		PI	,
927 ) : 23 РСДР 11 12 ВСДР	•	,			/ b	< 0.0
CARDAID		<u>_</u>	$C_{V} < .$	سر <del>:</del>	1 /	
Re Alterial - 32	Si 12.4		. 4			< 0.0
K PH 7,0	Sulfate 72	9R :	MN	•	<b>~</b>	110
Cr. 171.		Examiner ·			/	K. X. K. Examin
(*Unless otherwise in	· · · · · · · · · · · · · · · · · · ·		(*Unless otherwise *	\$ 14 <u>11 - 2 1</u>	<del></del>	
Reported (35 40	Best 1 Al	dison kim	Reported (35.40 - 1)	.1	15:4 1 Al	rlesson
AUG - 4 1981	Laborato Bureau of Disease Contr	ry Director of and Laboratory Service ENT OF PUBLIC HEALTH	400		Bureau of Disease Cont MICHIGAN DEPARTA	ory Director rol and Labo MENT OF PUB

Location Code (1

LARSING

2652

Phone No: 31376 ate sheet) Phone No. Section No: AMP 100 nat Date. (8-13) Depth (ft )—Diam. (in.) Sample Type (21) ilt (31-34) <0.005 (0.003 0.0005

رسد: یک

Loboratory Director

Bureau of Disease Control and Laboratory Services

MICHIGAN DEPARTMENT OF PUBLIC HEALTH

Examiner



To:

All Employees

Date:

July 9, 1981

Location:

Kalamazoo

Copy to:

B. S. Clark

K. L. Massimine

NA

From:

G. R. Backlund

Location:

Kalamazoo

Subject:

WELL WATER FOR DRINKING

Reference:

The Michigan Department of Public Health sampled water from the east and west wells in June. Upon completion of analyses, it was recommended that the well water not be used for drinking. As a result, bottled water has been provided in the areas of the plant where city water is not available.

The state reported finding small quantities of chlorinated hydrocarbons in the well water. These levels are not expected to cause adverse health effects, but in some cases the levels measured were above the Suggested No Adverse Response Levels (SNARL) published by the Occupational Safety and Health Administration. The chlorinated hydrocarbons found are commonly used as dry cleaning or degreasing solvents and their source is unknown.

Additional sampling has been carried out to determine if, in fact, these reported levels are correct. Until this matter is resolved, all drinking water serviced by these wells has been discontinued and, as mentioned above, bottled water is being provided.

G. R. Backlund

GRB/bjr

 	 エンドラー しょうかんけい	エアヘロ	<b>リ/エフ/フ</b> ン	-	D/ZI/Y3
·-			<b>-</b>		

· •	)				Sample	)	Sample
parameter	VALUE		-	Units		Sample Type	
1,1-DICHLOROETHANE		17.000 12.000		ug/l ug/l	05/19/93 05/20/93		08:50 AM 08:55 AM
Mean		14.500					
parameter	VALUE		_	Units	Sample Date	Sample Type	Sample Time
1-1-1-TRICHLOROETHAN		6.000	_		05/19/93 05/20/93		08:50 AM 08:55 AM
Mean		5.000					
parameter	VALUE		_	Units	Sample Date	Sample Type	Sample Time
BENZENE		Ø.000 Ø.000	*	ug/l ug/l	05/19/93 05/20/93		Ø8:50 AM Ø8:55 AM
Mean		0.000					
parameter	VALUE		_	Units	Sample Date	Sample Type	Sample Time
CADMIUM		0.300 0.300 0.600			05/19/93 05/20/93 05/21/93	24 HR. COMP	08:55 AM
Mean		0.400					
parameter	VALUE		-	Units	Sample Date	Sample Type	Sample Time
CHLOROFORM		2.000	-	ug/l	05/20/93	GRAB	Ø8:55 AM
Mean		2.000					
parameter	VALUE		_	Units	Sample Date	Sample Type	Sample Time
CHROMIUM		0.000 0.000 0.000	* *	ug/1	05/19/93 05/20/93 05/21/93		Ø8:50 AM Ø8:55 AM Ø8:50 AM
Mean		0.000					
parameter	VALUE			Units	Sample Date	Sample Type	Sample Time
COPPER		Ø.000 Ø.000 Ø.000	- * *	ug/l ug/l ug/l	05/19/93 05/20/93 05/21/93		08:50 AM 08:55 AM 08:50 AM
Mean indicates test result	s below	0.000 detect	ion	limits			

•	)			Sample	}	Sample
parameter	VALUE	-	Units	<del>-</del>	Sample Type	
ETHYLBENZENE	0.000 0.000	*	ug/l ug/l		GRAB GRAB	08:50 AM 08:55 AM
Mean	0.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
LEAD	5.600 6.900 6.900	-	ug/l ug/l ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP	08:50 AM 08:55 AM 08:50 AM
Mean	6.467					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
MERCURY	Ø.000 Ø.000 Ø.000	* * *	ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP	08:50 AM 08:55 AM 08:50 AM
Mean	0.000					
parameter	VALUE	_	Units	Sample Date		Sample Time
NICKEL	0.000 0.000 0.000	* * *	_	05/19/93 05/20/93 05/21/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:50 AM 08:55 AM 08:50 AM
Mean	0.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
PCB'S	Ø.000 Ø.000			05/19/93 05/20/93	GRAB GRAB	08:50 AM 08:55 AM
Mean	0.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
SILVER	0.000	*	ug/l		24 HR. COMP 24 HR. COMP 24 HR. COMP	08:50 AM 08:55 AM 08:50 AM
Mean	0.000					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOLUENE	1.000	_		05/19/93 05/20/93		08:50 AM 08:55 AM

indicates test results below detection limits

)

parameter	, VALUE	_	Units	Sample Date	Sample Type	Sample Time
Mean	8.000	-				
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
XYLENE	10.000	-	ug/l ug/l	05/19/93 05/20/93	GRAB GRAB	08:50 AM 08:55 AM
Mean	6.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
ZINC	67.400 93.500 103.700		ug/1 ug/1 ug/1	05/19/93 05/20/93 05/21/93	24 HR. COMP 24 HR. COMP	08:50 AM 08:55 AM 08:50 AM
Mean	88.200					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
Н	9.100 9.800	_	s.u.	05/19/93 05/20/93	GRAB GRAB	08:50 AM 08:55 AM
Mean	9.450					

## CITY OF KATAMAZOO WATER RECLANTION PLANT INDUSTRIAL SAMPLING SHEET

	Industrial	User		Amer	ican	Cyc	anam	id				
	Location (	Code		Ac	2	J						
	Crew:							<del></del>				
				<u> </u>	5 4	5K	·					
		Sampl	er #:		-							
Туре	of Sample	e:	(X) .	тіме с	OMPO	SITE	( )	FLOW CO	MPO	SITE	, ,	
	TIME ON	DATE	TIME OFF	DATE	# ALI0	QUOTS	VOL	METER READING	M E T A L S	CONV	V 0 C S	624 625 T H E R
#1	8:45am	5/18/93	8:50 am	5/M/43	10	1145	47	195442	V			
	Remarks:											
#2	9:00 am	5/19/93	8:45	5/20/	10	/142	41	182418	V			اسا.
	Remarks:											
#3	8:56m	5/20/93	8:50	5/21/9:	10	1143	24	214334	V	1		
	Remarks:											
#4			,	,	min	Ĵ		254500				
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#5					min	1						
	Remarks:											
FINA	L REMARK	(S:										

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO No10586 DEPARTMENT OF PUBLIC UTILITIES PURPOSE OF ANALYSIS: SAMPLERS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 jance, 616-385-8157 DATE/TIME DATE/TIME D С G ITEM SAMPLE SAMPLE LOCATION, DESCRIPTION **NUMBER & SIZE** 0 R SAMPLE I.D. NUMBER NUMBER OF CONTAINER М Α & REMARKS Ε Ε Р В American uan am id ξ. ₩. RECEIVED E RECEIVED E DATE/TIME Υ. ΒΥ: 3 RELINQUISHED E (Signature) 4 RELINQUISHED E (Signature) Am. Ag/ 11:25 DATE/TIME GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT UE (ug/L)COMD pН **CADMIUM** 0.3 EPA METHOD 601 BOD TOTAL CHROMIUM 100.0 < CBOD HEX. CHROME COD COPPER 90.0 < TSS LEAD 5.6 60.0 VSS \_NICKEL < NH<sub>3</sub>-N ZINC 67.4 **EPA METHOD 602** TOTAL P SILVER 0.5 < 0.5 ORTHO P MERCURY GREASE/OIL BERYLLIUM ELINQUISHED BY: CHLORIDE BARIUM REMARKS CN - TOTAL **CN - AMENABLE** OTHER 22-Jun-93



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 East Lansing (517) 332-0167 Fax (517) 332-6333 Indianapolis (317) 577-8087 Fax (317) 594-9406

June 8, 1993

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 41517

Attention: Mr. Nasim Ansari

### **Analytical Laboratory Report**

**Project: Compliance Monitoring** 

Samples collected by: S. KUILEMA Date/Time Submitted: 05/20/93 15:24

PO #: 056756

FECL #: AA03802
Tag: 1, 2 & 3 American Cyanamid 2 AC213993
Date/Time Collected: 05/19/93 08:50

Matrix: Liquid

Container(s): 40 mL Vials, 2-Amber Liter, 500 mL Plastic Preservation: None/NaOH\*/Refrigeration

\*Laboraroty Preserved



FECL #: AA03802 TAG: 1, 2 & 3 American Cyanamid 2 AC213993

Analysis	Results	Units	MDL	Method
INORGANICS	NT-4 detected		0.007	335.2 Lachat
Cyanide	Not detected	mg/l	0.007	333.2 Laciiai
Purgeables				
Benzene	Not detected	mg/l	0.001	624
Bromodichloromethane	Not detected	mg/l	0.001	624
Bromoform	Not detected	mg/l	0.001	624
Bromomethane	Not detected	mg/l	0.001	624
Carbon tetrachloride	Not detected	mg/l	0.001	624
Chlorobenzene	Not detected	mg/l	0.001	624
Chloroethane	Not detected	mg/l	0.001	624
2-Chloroethylvinyl ether	Not detected	mg/l	0.001	624
Chloroform	Not detected	mg/l	0.001	624
Chloromethane	Not detected	mg/l	0.001	624
Dibromochloromethane	Not detected	mg/l	0.001	624
1,2-Dichlorobenzene	Not detected	mg/l	0.001	624
1,3-Dichlorobenzene	Not detected	mg/l	0.001	624
1,4-Dichlorobenzene	Not detected	mg/l	0.001	624
1,1-Dichloroethane	0.017	mg/l	0.001	624
1,2-Dichloroethane	Not detected	mg/l	0.001	624
1,1-Dichloroethene	Not detected	mg/l	0.001	624
trans-1,2-Dichloroethene	Not detected	mg/l	0.001	624
1,2-Dichloropropane	Not detected	mg/l	0.001	624
cis-1,3-Dichloropropene	Not detected	mg/l	0.001	624
trans-1,3-Dichloropropene	Not detected	mg/l	0.001	624
Ethyl benzene	0.001	mg/l	0.001	624
Methylene chloride	Not detected	mg/l	0.001	624
1,1,2,2-Tetrachloroethane	Not detected	mg/l	0.001	624
Tetrachloroethene	Not detected	mg/l	0.001	624
Toluene	0.001	mg/l	0.001	624
1,1,1-Trichloroethane	0.006	mg/l	0.001	624
1,1,2-Trichloroethane	Not detected	mg/l	0.001	624
Trichloroethene	Not detected	mg/l	0.001	624
Trichlorofluoromethane	Not detected	mg/l	0.001	624
Vinyl chloride	Not detected	mg/l	0.001	624
p,m-Xylene	0.004	mg/l	0.001	624
o-Xylene	0.006	mg/l	0.001	624



FECL #: AA03802 TAG: 1, 2 & 3 American Cyanamid 2 AC213993

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids				
Acenapthene	Not detected	mg/l	0.01	EPA625
Acenapthylene	Not detected	mg/l	0.01	<b>EPA625</b>
Anthracene	Not detected	mg/l	0.01	<b>EPA625</b>
Benzidine	Not detected	mg/l	0.01	EPA625
Benzo(a)anthracene	Not detected	mg/l	0.01	EPA625
Benzo(b)flouranthene	Not detected	mg/l	0.01	EPA625
Benzo(k)flouranthene	Not detected	mg/l	0.01	EPA625
Benzo(ghi)pyrlene	Not detected	mg/l	0.01	EPA625
Benzo(a)pyrene	Not detected	mg/l	0.01	EPA625
Bis(2-chloroethoxy)methane	Not detected	mg/l	0.01	EPA625
Bis(2-chloroethyl)ether	Not detected	mg/l	0.01	EPA625
Bis(2-chlorisopropyl)ether	Not detected	mg/l	0.01	<b>EPA625</b>
Bis(2-ethylhexyl)phthalate	Not detected	mg/l	0.01	EPA625
4-Bromophenyl phenyl ether	Not detected	mg/l	0.01	EPA625
Butyl benzyl phthalate	Not detected	mg/l	0.01	EPA625
2-Chloronapthalene	Not detected	mg/l	0.01	EPA625
4-Chloro-3-methylphenol	Not detected	mg/l	0.01	EPA625
2-Chlorophenol	Not detected	mg/l	0.01	EPA625
4-Chlorophenyl phenyl ether	Not detected	mg/l	0.01	EPA625
Chrysene	Not detected	mg/l	0.01	EPA625
Dibenz(a,h)anthracene	Not detected	mg/l	0.01	EPA625
Dibutyl phthalate	Not detected	mg/l	0.01	EPA625
Di-n-butylphthalate	Not detected	mg/l	0.01	EPA625
1,2-Dichlorobenzene	Not detected	mg/l	0.01	EPA625
1,3-Dichlorobenzene	Not detected	mg/l	0.01	<b>EPA625</b>
1,4-Dichlorobenzene	Not detected	mg/l	0.01	EPA625
3,3'-Dichlorobenzidine	Not detected	mg/l	0.01	EPA625
2,4-Dichlorophenol	Not detected	mg/l	0.01	EPA625
Diethyl phthalate	Not detected	mg/l	$0.0\overline{1}$	EPA625
Dimethyl phthalate	Not detected	mg/l	0.01	EPA625
4,6-Dinitro-2-methylphenol	Not detected	mg/l	0.01	EPA625
2,4-Dinitrophenol	Not detected	mg/l	0.01	EPA625
2,4-Dinitrotoluene	Not detected	mg/l	0.01	<b>EPA625</b>
2,6-Dinitrotoluene	Not detected	mg/l	0.01	<b>EPA625</b>
Di-n-octyl phthalate	Not detected	mg/l	0.01	EPA625
Fluorathene	Not detected	mg/l	0.01	<b>EPA625</b>
Fluorene	Not detected	mg/l	0.01	EPA625
Hexachlorobenzene	Not detected	mg/l	0.01	EPA625
Hexachlorobutadiene	Not detected	mg/l	0.01	EPA625
	Not detected	mg/l	0.01	EPA625
Hexachlorocyclopentadiene Hexachloroethane	Not detected	mg/l	0.01	EPA625
	Not detected	mg/l	0.01	EPA625
Ideno(1,2,3-cd)pyrene	Not detected	mg/l	0.01	EPA625
Isophorone	THE DEFECTION	***P' *	0.02	



FECL #: AA03802 TAG: 1, 2 & 3 American Cyanamid 2 AC213993

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids	(continued)			
Napthalene	Not detected	mg/l	0.01	EPA625
Nitrobenzene	Not detected	mg/l	0.01	EPA625
2-Nitrophenol	Not detected	mg/l	0.01	EPA625
4-Nitrophenol	Not detected	mg/l	0.01	EPA625
N-Nitroso-di-n-butylamine	Not detected	mg/l	0.01	<b>EPA625</b>
N-Nitrosodimethylamine	Not detected	mg/l	0.01	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.01	EPA625
N-Nitrosodiphenylamine	Not detected	mg/l	0.01	EPA625
N-nitrosodi-n-propylamine	Not detected	mg/l	0.01	EPA625
Pentachlorophenol	Not detected	mg/1	0.01	<b>EPA625</b>
2-Methyl-4,6-dintrophenol	Not detected	mg/l	0.01	<b>EPA625</b>
Phenol	Not detected	mg/l	$0.0\overline{1}$	EPA625
Pyrene	Not detected	mg/l	0.01	<b>EPA625</b>
1,2,4-Trichlorobenzene	Not detected	mg/I	0.01	<b>EPA625</b>
2,4,6-Trichlorophenol	Not detected	mg/l	0.01	EPA625
2, 1,0 21101110101101		6		
Organochlorine Pesticides &	& PCB			
Aldrin	Not detected	mg/l	0.0001	608
a-BHC	Not detected	mg/l	0.0001	608
b-BHC	Not detected	mg/l	0.0001	608
d-BHC	Not detected	mg/l	0.0001	608
Chlordane	Not detected	mg/l	0.0001	608
4,4'-DDD	Not detected	mg/l	0.0001	608
4,4'-DDE	Not detected	mg/l	0.0001	608
4,4'-DDT	Not detected	mg/l	0.0001	608
Dieldrin	Not detected	mg/l	0.0001	608
Endosulfan I	Not detected	mg/l	0.0001	608
Endosulfan II	Not detected	mg/l	0.0001	608
Endosulfan sulfate	Not detected	mg/l	0.0001	608
Endrin	Not detected	mg/l	0.0001	608
Endrin aldehyde	Not detected	mg/l	0.0001	608
Heptachlor	Not detected	mg/l	0.0001	608
Heptachlor epoxide	Not detected	mg/l	0.0001	608
Toxaphene	Not detected	mg/l	0.0001	608
PCB-1016	Not detected	mg/l	0.0001	608
PCB-1221	Not detected	mg/l	0.0001	608
PCB-1232	Not detected	mg/l	0.0001	608
PCB-1242	Not detected	mg/l	0.0001	608
PCB-1248	Not detected	mg/l	0.0001	608
PCB-1254	Not detected	mg/l	0.0001	608
PCB-1260	Not detected	mg/l	0.0001	608
		<del></del>	*****	



FECL #: AA03802

Note: Methods may be modified for improved performance.

U.F. Mushaking

Violetta F. Murshak Laboratory Manager

FIRE & ENVIRONMENTAL CONSULTING

NUMBER DATE 06/08/93 AA03802 INVOICE

LABORATORIES, INCORPORATED

P.O. Box 992

Rast Lansing, MI, 48823

Phone: (517) 332-0167

Federal Tax Number: 38-2690076

Invoice To:

Attention: Financial Dept.

AA03802

Report Sent To:

City of Kalamazoo 241 V. South Street

Kalamazoo, MI 49007

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attention: Mr. Wasim Ansari

Purchase Order #: 056756

Project Description: Compliance Monitoring

C.O.C. #: 10587

1 Liquid Sample For:

Method 624 - Purgeables & \$200.00/ea. \$ 200.00

Method 625 - Semi-Volatiles @ \$400.00/ea.

(Includes Method 608 - Organochlorine Pest. & PCB's) 400.00 Cyanide @ \$40.00/ea. 40.00

Subtotal:

\$ 640.00

Less 20% Discount: TOTAL INVOICE DUE:

128.00 \$ 512.00

Terms: Net 30 deld

Thank you for using our laboratory! If any questions arise, please call.\_

PLEASE RETURN YELLOW COPY OF INVOICE WITH PAYMENT. THANK YOU.

	OF KALAMAZOO RTMENT OF PUBLIC UTI	ITIEC -		DI RECI	JNDF			REPORT FORM	Nº	105
1415 N. H	Harrison :oo, Michigan 49007	1 DAINIT	ture			PURPO	se of analysis: Mpliance.	Monitoring		<del>т</del>
ITEI NUME		SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	D A T E	T I M E	0	SAMPLE LO	CATION, DESCRIPTION REMARKS	DATE/TIME	DATE/TIME
	American Cyanamid	2 13993	2-1L. Amber	n 11/93	8:50 AM	/	M Pit/ 51	ightly EPA 625	T	
2	Cyanamid	2 /3993		1.193	8;80 AM		4 PH/ SI	ghtly /EPA 624	ED BY:	ED BY: ure)
_3	Adamican	3 Asag	= 1-50ml	5/19/93	83574.	nj	Pit /4	clouds/cw	RECEIVED (Signature)	RECEIVED BY: (Signature)
							ι		TIME	DATE/TIME
					<u></u>			· · · · · · · · · · · · · · · · · · ·	DATE	<del> </del>
									LED BY:	1ED BY:
									3 RELINQUISHED (Signature)	4 RELINQUISHED I (Signature)
GENE	RAL/CONVENTIONAL	RESULT	TRACE METALS	RESU	ILT ORG	ANIC CO	MPOUNDS RESU	_T	TE/TIME	IE/TIME
	pН		CADMIUM	<del></del>	1	EPA METI	HOD 601	_	2/30	29 //2
Ī	BOD		TOTAL CHROMIUM					7	1	
					11	l		į.	1	
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									SEIVED Annuel CEIVED	EIVED nature)
	COD		COPPER						RECEIVED (Signature)	RECEIVED BY: (Signature)
	COD TSS VSS NH,-N		COPPER LEAD NICKEL ZINC			EPA METI			RECEIVED (Signature)	RECEIVED (Signature)
	COD TSS VSS NH <sub>3</sub> -N TOTAL P		COPPER  LEAD  NICKEL  ZINC  SILVER			EP	A 625		TIME REGEIVED	E/TIME ARECEIVED (Signature)
	COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P		COPPER LEAD NICKEL ZINC SILVER MERCURY			EPA METI	A 625		TIME REGEIVED	RECEIVED (Signature)
	COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P GREASE/OIL		COPPER  LEAD  NICKEL  ZINC  SILVER  MERCURY  BERYLLIUM		\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	EP	A 625		DATEITIME RECEIVED  SIGNATURE  SOUTH AN SIGNATURE  SOUTH AND SOUTH	DATE/TIME RECEIVED
	COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P GREASE/OIL CHLORIDE		COPPER LEAD NICKEL ZINC SILVER MERCURY			EP	A 625	XS:	BY: SA 10.0 (SIGNATURE)	E/TIME ARECEIVED (Signature)
	COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P GREASE/OIL CHLORIDE CN - TOTAL		COPPER  LEAD  NICKEL  ZINC  SILVER  MERCURY  BERYLLIUM			EP	A 625	ARKS:	BY: SA 10.0 (SIGNATURE)	BY: Sylvature)
	COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P GREASE/OIL CHLORIDE		COPPER  LEAD  NICKEL  ZINC  SILVER  MERCURY  BERYLLIUM			EP	A 625	REMARKS:	DATEITIME RECEIVED  SIGNATURE  SOUTH AN SIGNATURE  SOUTH AND SOUTH	ED BY: STETTIME MECEIVED

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO No 10595 DEPARTMENT OF PUBLIC UTILITIES SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 Monitoring Stromere Compliance 616-385-8157 DATE/TIME DATE/TIME G C ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION R 0 SAMPLE I.D. NUMBER NUMBER OF CONTAINER М М Α & REMARKS E В AC2 4193 HNIENICAL RECEIVED BY: (Signature) Ε. DATE/TIME ₽. Β.: 3 RELINQUISHED E (Signature) 4 RELINQUISHED E (Signature) 12:25 Cm DATE/TIME **GENERAL/CONVENTIONAL** RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT UE (ug/L) 0.3 CADMIUM **EPA METHOD 601** рΗ TOTAL CHROMIUM 100.0 BOD < **CBOD** HEX. CHROME COD COPPER < 90.0 6.9 TSS LEAD 60.0 NICKEL VSS < 93.5 ZINC EPA METHOD 602 NH<sub>3</sub>-N TOTAL P SILVER < 0.5 0.5 ORTHO P MERCURY < GREASE/OIL BERYLLIUM CHLORIDE BARIUM REMARKS CN - TOTAL **CN - AMENABLE** OTHER 22-Jun-93 Form 1015



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 East Lansing (517) 332-0167 Fax (517) 332-6333 Indianapolis (317) 577-8087 Fax (317) 594-9406

June 8, 1993

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 41517

Attention: Mr. Nasim Ansari

## **Analytical Laboratory Report**

**Project: Compliance Monitoring** 

Samples collected by: J. STROMEZER Date/Time Submitted: 05/24/93 13:20

PO #: 056756

FECL #: AA03845

Tag: 1, 2 & 3 American Cyanamid AC214093 Date/Time Collected: 05/20/93 08:55

Matrix: Liquid

Container(s): 40 mL Vial, 2-Amber Liter, 250 mL Plastic Preservation: None/NaOH\*/Refrigeration

\*Laboratory Preserved



FECL #: AA03845 TAG: 1, 2 & 3 American Cyanamid AC214093

Analysis	Results	Units	MDL	Method
INORGANICS			0.007	005 0 T 1.4
Cyanide	Not detected	mg/l	0.007	335.2 Lachat
•				
Purgeables		. /1	0.001	624
Benzene	Not detected	mg/l	0.001	624
Bromodichloromethane	Not detected	mg/l	0.001	
Bromoform	Not detected	mg/l	0.001	624
Bromomethane	Not detected	mg/l	0.001	624
Carbon tetrachloride	Not detected	mg/l	0.001	624
Chlorobenzene	Not detected	mg/l	0.001	624
Chloroethane	Not detected	mg/l	0.001	624
2-Chloroethylvinyl ether	Not detected	mg/l	0.001	624
Chloroform	0.002	mg/l	0.001	624
Chloromethane	Not detected	mg/l	0.001	624
Dibromochloromethane	Not detected	mg/l	0.001	624
1,2-Dichlorobenzene	Not detected	mg/l	0.001	624
1,3-Dichlorobenzene	Not detected	mg/l	0.001	624
1,4-Dichlorobenzene	Not detected	mg/l	0.001	624
1,1-Dichloroethane	0.012	mg/l	0.001	624
1,2-Dichloroethane	Not detected	mg/l	0.001	624
1,1-Dichloroethene	Not detected	mg/l	0.001	624
trans-1,2-Dichloroethene	Not detected	mg/l	0.001	624
1,2-Dichloropropane	Not detected	mg/l	0.001	624
cis-1,3-Dichloropropene	Not detected	mg/l	0.001	624
trans-1,3-Dichloropropene	Not detected	mg/l	0.001	624
Ethyl benzene	Not detected	mg/l	$0.00\bar{1}$	624
Mathylana chlarida	Not detected	mg/l	0.001	624
Methylene chloride	Not detected	mg/l	0.001	624
1,1,2,2-Tetrachloroethane	Not detected	mg/l	0.001	624
Tetrachloroethene	0.015	mg/1	0.001	624
Toluene		mg/l	0.001	624
1,1,1-Trichloroethane	0.004 Not detected	mg/l	0.001	624
1,1,2-Trichloroethane	Not detected	mg/l	0.001	624
Trichloroethene	Not detected	mg/l	0.001	624
Trichlorofluoromethane	Not detected	mg/l	0.001	624
Vinyl chloride	Not detected	mg/l	0.001	624
p,m-Xylene	0.002	mg/l	0.001	624
o-Xylene	Not detected	mg/l	0.001	ULT



FECL #: AA03845 TAG: 1, 2 & 3 American Cyanamid AC214093

	Dem-14a	Tinita	MDL	Method
Analysis Research Asida	Results	<u>Units</u>	WIDL	Michiga
Base/Neutral, Acids	Not detected	mg/l	0.01	<b>EPA625</b>
Acenapthene	Not detected	mg/l	0.01	EPA625
Acenapthylene	Not detected	mg/l	0.01	EPA625
Anthracene	Not detected	mg/l	0.01	EPA625
Benzidine	Not detected	mg/l	0.01	EPA625
Benzo(a)anthracene	Not detected		0.01	EPA625
Benzo(b)flouranthene	Not detected	mg/l	0.01	EPA625
Benzo(k)flouranthene	Not detected	mg/l mg/l	0.01	EPA625
Benzo(ghi)pyrlene	Not detected	mg/l	0.01	EPA625
Benzo(a)pyrene	Not detected	mg/l	0.01	EPA625
Bis(2-chloroethoxy)methane	Not detected	mg/l	0.01	EPA625
Bis(2-chloroethyl)ether			0.01	EPA625
Bis(2-chlorisopropyl)ether	Not detected	mg/l	0.01	EPA625
Bis(2-ethylhexyl)phthalate	Not detected	mg/l	0.01	EPA625
4-Bromophenyl phenyl ether	Not detected	mg/l	0.01	EPA625
Butyl benzyl phthalate	Not detected	mg/l	0.01	EPA625
2-Chloronapthalene	Not detected	mg/l	0.01	EPA625
4-Chloro-3-methylphenol	Not detected	mg/l		EPA625
2-Chlorophenol	Not detected	mg/l	0.01	EPA625
4-Chlorophenyl phenyl ether	Not detected	mg/l	0.01	EPA625
Chrysene	Not detected	mg/l	0.01	
Dibenz(a,h)anthracene	Not detected	mg/l	0.01	EPA625
Dibutyl phthalate	Not detected	mg/l	0.01	EPA625
Di-n-butylphthalate	Not detected	mg/l	0.01	EPA625
1,2-Dichlorobenzene	Not detected	mg/l	0.01	EPA625
1,3-Dichlorobenzene	Not detected	mg/l	0.01	EPA625
1,4-Dichlorobenzene	Not detected	mg/1	0.01	EPA625
3,3'-Dichlorobenzidine	Not detected	mg/l	0.01	EPA625
2,4-Dichlorophenol	Not detected	mg/l	0.01	EPA625
Diethyl phthalate	Not detected	mg/l	0.01	EPA625
Dimethyl phthalate	Not detected	mg/l	0.01	EPA625
4,6-Dinitro-2-methylphenol	Not detected	mg/l	0.01	EPA625
2,4-Dinitrophenol	Not detected	mg/l	0.01	EPA625
2,4-Dinitrotoluene	Not detected	mg/l	0.01	EPA625
2,6-Dinitrotoluene	Not detected	mg/l	0.01	EPA625
Di-n-octyl phthalate	Not detected	mg/l	0.01	EPA625
Fluorathene	Not detected	mg/l	0.01	EPA625
Fluorene	Not detected	mg/l	0.01	EPA625
Hexachlorobenzene	Not detected	mg/l	0.01	EPA625
Hexachlorobutadiene	Not detected	mg/l	0.01	EPA625
Hexachlorocyclopentadiene	Not detected	mg/l	0.01	EPA625
Hexachloroethane	Not detected	mg/l	0.01	EPA625
Ideno(1,2,3-cd)pyrene	Not detected	mg/l	0.01	EPA625
	Not detected	mg/l	0.01	EPA625
Isophorone	-101 00100100	~~~~~		



FECL #: AA03845 TAG: 1, 2 & 3 American Cyanamid AC214093

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids	(continued)			
Napthalene	Not detected	mg/l	0.01	EPA625
Nitrobenzene	Not detected	mg/l	0.01	EPA625
2-Nitrophenol	Not detected	mg/l	0.01	<b>EPA625</b>
4-Nitrophenol	Not detected	mg/l	0.01	EPA625
N-Nitroso-di-n-butylamine	Not detected	mg/l	0.01	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.01	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.01	EPA625
N-Nitrosodiphenylamine	Not detected	mg/l	0.01	<b>EPA625</b>
N-nitrosodi-n-propylamine	Not detected	mg/l	0.01	<b>EPA625</b>
Pentachlorophenol	Not detected	mg/l	0.01	EPA625
2-Methyl-4,6-dintrophenol	Not detected	mg/l	0.01	EPA625
Phenol	Not detected	mg/l	0.01	EPA625
	Not detected	mg/l	0.01	EPA625
Pyrene	Not detected	mg/l	0.01	EPA625
1,2,4-Trichlorobenzene	Not detected	mg/l	0.01	EPA625
2,4,6-Trichlorophenol	1401 detected	mg/ r	0.01	
Organochlorine Pesticides	& PCB			
Aldrin	Not detected	mg/l	0.0001	608
a-BHC	Not detected	mg/l	0.0001	608
b-BHC	Not detected	mg/l	0.0001	608
d-BHC	Not detected	mg/l	0.0001	608
Chlordane	Not detected	mg/l	0.0001	608
4,4'-DDD	Not detected	mg/l	0.0001	608
4,4'-DDE	Not detected	mg/l	0.0001	608
4,4'-DDT	Not detected	mg/l	0.0001	608
Dieldrin	Not detected	mg/l	0.0001	608
Endosulfan I	Not detected	mg/l	0.0001	608
Endosulfan II	Not detected	mg/l	0.0001	608
Endosulfan sulfate	Not detected	mg/l	0.0001	608
Endrin	Not detected	mg/l	0.0001	608
Endrin aldehyde	Not detected	mg/l	0.0001	608
Heptachlor	Not detected	mg/l	0.0001	608
Heptachlor epoxide	Not detected	mg/l	0.0001	608
Toxaphene	Not detected	mg/l	0.0001	608
PCB-1016	Not detected	mg/l	0.0001	608
PCB-1221	Not detected	mg/l	0.0001	608
PCB-1232	Not detected	mg/l	0.0001	608
PCB-1242	Not detected	mg/l	0.0001	608
PCB-1248	Not detected	mg/l	0.0001	608
PCB-1254	Not detected	mg/l	0.0001	608
PCB-1260	Not detected	mg/l	0.0001	608



FECL #: AA03845

Note: Methods may be modified for improved performance.

V.F. Mushalepa Violetta F. Murshak Laboratory Manager

FIRE & ENVIRONMENTAL CONSULTING

INVOICE DATE NUMBER
06/08/93 AA03845

LABORATORIES, INCORPORATED

P.O. Box 992

Bast Lansing, MI, 48823

Phone: (517) 332-0167

Federal Tax Number: 38-2690076

Invoice To:

Attention: Financial Dept.

Report Sent To:

City of Kalamazoo

241 W. South Street Kalamazoo, MI 49007 City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attention: Mr. Masim Ansari

Purchase Order #: 056756

Project Description: Compliance Monitoring

C.O.C. #: 10598

1 Liquid Sample For:

Method 624 - Purgeables @ \$200.00/ea. \$ 200.00

AA03845

Method 625 - Semi-Volatiles @ \$400.00/ea.

(Includes Method 608 - Organochlorine Pest. & PCB's) 400.00 Cyanide 2 \$40.00/ea. 40.00

Subtotal:

\$ 640.00

Less 20% Discount:

128.00

TOTAL INVOICE DUB:

\$ 512.00

Terms: Net 30 deld

Thank you for using our laboratory! If any questions arise, please call.

PLEASE RETURN TELLOW COPY OF INVOICE WITH PAYMENT. THANK YOU.

F. Mushohm

		AMAZOO		AIN	OF CUSTOL	Y KEC	OKD	AN	D LAR	ANALYSIS	REPORT FORM	n NATA	40500
	RTMEN Harrison	T OF PUBLIC UTILITIE	) SAM	PLERS	3:			P		OF ANALYSIS:	• / .	No	10598
	zoo, Mich	nigan 49007	(Sign	ature)	. Strong	0			$\sim$	ompliance	Monitoring		<del></del>
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	EM 1BER	SAMPLE I.D.	SAMPLE NUMBER		NUMBER & SIZE OF CONTAINER	A T	) M	) M	и Ì А		ATION, DESCRIPTION REMARKS	DATE/TIME	DATE/TIME
			, ACZ			E 5/2 /	E	<del>                                     </del>	P B	ļ		ă	ă
1		American Cyanam	-مدرر ال	3	1-500ml	\$20/93	8 55 W		M	pit / de	a / CNT		
<u>ر</u>		1	ACZ		1-40ml	5/20/ A3			M	111/ 00	can /624	₩.:	.: B
2	<u> </u>	Ancer Can Cyanamia	14093 ACZ	-	1-90mc	5/2-1	3.55a	4		Pit/ Ce	7	IVED ture)	IVED ture)
2		American Cyanamio	14093	2	2-17 amlur	5/20/93	8:55 ar		M	pit/ du	cm/625	RECEIVED (Signature)	RECEIVED (Signature)
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	BOD				TOTAL CHROMIUM			+					1 3
	CBOD				HEX. CHROME	<del></del>	-   L	1 6	EPA (	24		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	الله الله
	COD				COPPER	<del></del>		1		86		(a) (b) (c) (c) (d) (d) (d) (d) (d) (d) (d) (d) (d) (d	9 9
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	vss				NICKEL						1 7	REC (Sig	RECEIV (Signatu
	NH3-N				ZINC			EP/	A METHOD	602		三年	TIME
	TOTAL	P			SILVER						1	E	
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L	L			<u>l</u>	<u> </u>						]	S S S	실 양명 기

. parameter	, VALUE	_	Units	Sample Date	Sample Type	Sample Time
BENZENE	Ø.000 Ø.000	- * *	ug/l ug/l	05/19/93 05/20/93	GRAB GRAB	08:35 AM 08:30 AM
Mean	0.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
CADMIUM	Ø.700 Ø.800 Ø.800	<del></del>	ug/l ug/l ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:35 AM 08:30 AM 08:30 AM
Mean	0.767					
parameter	VALUE	<b>-</b>	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	0.000 0.000 0.000	* * *	ug/l ug/l ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:35 AM 08:30 AM 08:30 AM
Mean	0.000					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COPPER	0.000 0.000 0.000	* * *	ug/l ug/l ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:35 AM 08:30 AM 08:30 AM
Mean	0.000					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CYANIDES	0.000	*	ug/l	05/20/93	GRAB	Ø8:30 AM
Mean	0.000					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ETHYLBENZENE	0.000 0.000		ug/l	05/19/93 05/20/93	GRAB GRAB	08:35 AM 08:30 AM
Mean	0.000					
parameter	VALUE	***	Units	Sample Date	Sample Type	Sample Time
LEAD			ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP	Ø8:35 AM
Mean	8.167	ion	limita			

indicates test results below detection limits

,	)			Sample	,	Sample
parameter	VALUE	_	Units	Date	Sample Type	Time
MERCURY	0.000 0.000 0.000	*	ug/l ug/l ug/l	05/19/93 05/20/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:35 AM 08:30 AM 08:30 AM
Mean	0.000					
parameter	VALUE	****	Units		Sample Type	Sample Time
NICKEL	Ø. ØØØ Ø. ØØØ Ø. ØØØ	*	ug/l ug/l ug/l	05/20/93		08:35 AM 08:30 AM 08:30 AM
Mean	0.000					
parameter	VALUE	•••	Units	Sample Date	Sample Type	Sample Time
PCB'S	Ø. ØØØ Ø. ØØØ	*		05/19/93		08:35 AM 08:30 AM
Mean	0.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
SILVER	Ø. ØØØ Ø. ØØØ Ø. ØØØ	*	ug/l	05/19/93 05/20/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:35 AM 08:30 AM 08:30 AM
Mean	0.000					
parameter	VALUE	•••	Units	Sample Date	Sample Type	Sample Time
TOLUENE	Ø. ØØØ Ø. ØØØ	*	ug/l ug/l	05/19/93 05/20/93	GRAB GRAB	08:35 AM 08:30 AM
Mean	0.000					
parameter	VALUE	•	Units	Sample Date	Sample Type	Sample Time
XYLENE	7.000 0.000	*	ug/l ug/l	05/19/93 05/20/93	GRAB GRAB	08:35 AM 08:30 AM
Mean	3.500					
parameter	VALUE	•	Units	Sample Date	Sample Type	Sample Time
ZINC	80.500 82.500 107.700		ug/l ug/l ug/l	05/19/93 05/20/93 05/21/93	24 HR. COMP 24 HR. COMP 24 HR. COMP	08:35 AM 08:30 AM 08:30 AM

indicates test results below detection limits

parameter	VALUE	4/8	Units	Sample '	Sample Type	Sample Time
Mean	90.233	-	Acres from speed fields again	مين نيس فيم عين ملك دين مين ملك		that they have have have have under heav
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
рН	7.900 6.900	•••	S.U. S.U.	05/19/93 05/20/93	GRAB GRAB	08:35 AM 08:30 AM
Mean	7.400					

### CITY OF K. AMAZOO WATER RECLAN TION PLANT INDUSTRIAL SAMPLING SHEET

	Industrial	User		Imen	Can	Cy	anar	mid				
	Location (	Code			13	<u> </u>						
	Crew:											
				J	5+	sk						
		Sampl	er #:									
Туре	of Sample	<b>)</b> :	(X).	тіме с	OMPC	SITE	( )	FLOW CO	MPO	SITE	•	
	TIME ON	DATE	TIME OFF	DATE	# ALIO	QUOTS	VOL	(x 100) METER READING	M E T A L S	C O N V	V 0 C S	O T H E R
#1	8:30am	5/18/13	8:35 AM	7/9/93	10	1145		3236751				CN 624
	Remarks:											
#2	8:45 AM	5/19/93	8:30 am	5/20/13	10	1142	47	3237646	V			624
	Remarks:											
#3	8:40 am	5/20/93	8:30 am	5/21/12	/O	/143	37	3238406	V			
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#4			,	•	min	1		3239250				
	Remarks:											
#5					min	/						
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FINA	L REMARK	KS:									<del></del>	

CHAIN OF CUSTODY BEFORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO 10589 DEPARTMENT OF PUBLIC UTILITIES SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 iance 616-385-8157 DATE/TIME D Т С G DATE/TIM **NUMBER & SIZE** ITEM SAMPLE SAMPLE LOCATION, DESCRIPTION-0 R A SAMPLE I.D. NUMBER NUMBER OF CONTAINER М М & REMARKS Ε Ε Ρ В American AC3 13993 Υ. ₽. RECEIVED E (Signature) RECEIVED I (Signature) DATE/TIME DATE/TIME ₽: ΒΥ: 3 RELINQUISHED E (Signature) 4 RELINQUISHED I (Signature) DATE/TIME 05/11:20 19/A.M. A.M. DATE/TIME GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT UE (ug/L)3. COM a CADMIUM 0.7 EPA METHOD 601 рΗ 100.0 BOD TOTAL CHROMIUM < HEX. CHROME CBOD COD COPPER RECEIVED (Signature) 90.0 LEAD 5.8 TSS VSS NICKEL 60.0 ZINC 80.5 EPA METHOD 602 NH<sub>3</sub>-N TOTAL P SILVER 0.5 < 0.5 ORTHO P MERCURY GREASE/OIL **BERYLLIUM** CHLORIDE BARIUM REMARKS CN - TOTAL CN - AMENABLE OTHER 22-Jun-93

Form 1015



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 East Lansing (517) 332-0167 Fax (517) 332-6333 Indianapolis (317) 577-8087 Fax (317) 594-9406

June 8, 1993

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 41517

Attention: Mr. Nasim Ansari

#### **Analytical Laboratory Report**

**Project: Compliance Monitoring** 

Samples collected by: J. STOMEZER Date/Time Submitted: 05/20/93 15:24

PO #: 056756

FECL #: AA03803

Tag: 1, 2 & 3 American Cyanamid AC313993 Date/Time Collected: 05/19/93 08:35

Matrix: Liquid

Container(s): 40 mL Vials, 2-Amber Liter, 500 mL Plastic Preservation: None/NaOH\*/Refrigeration

\*Laboraroty Preserved

\*\* Methods 625 & 608 Higher Detection Limit Due to Matrix Interferences.



FECL #: AA03803 TAG: 1, 2 & 3 American Cyanamid AC313993

Analysis	Results	Units	MDL	Method
INORGANICS	37-4 J 1	/1	0.007	225 2 7 1 .
Cyanide	Not detected	mg/l	0.007	335.2 Lachat
Purgeables				
Benzene	Not detected	mg/l	0.001	624
Bromodichloromethane	Not detected	mg/l	0.001	624
Bromoform	Not detected	mg/l	$0.00\bar{1}$	624
Bromomethane	Not detected	mg/l	$0.00\bar{1}$	624
Carbon tetrachloride	Not detected	mg/l	0.001	624
Chlorobenzene	Not detected	mg/l	0.001	624
Chloroethane	Not detected	mg/l	0.001	624
2-Chloroethylvinyl ether	Not detected	mg/l	0.001	624
Chloroform	Not detected	mg/l	0.001	624
Chloromethane	Not detected	mg/l	0.001	624
Dibromochloromethane	Not detected	mg/l	0.001	624
1,2-Dichlorobenzene	Not detected	mg/l	0.001	624
1,3-Dichlorobenzene	Not detected	mg/l	0.001	624
1,4-Dichlorobenzene	Not detected	mg/l	0.001	624
1,1-Dichloroethane	Not detected	mg/l	0.001	624
1,2-Dichloroethane	Not detected	mg/l	0.001	624
1,1-Dichloroethene	Not detected	mg/l	0.001	624
trans-1,2-Dichloroethene	Not detected	mg/l	0.001	624
1,2-Dichloropropane	Not detected	mg/l	0.001	624
cis-1,3-Dichloropropene	Not detected	mg/l	0.001	624
trans-1,3-Dichloropropene	Not detected	mg/l	0.001	624
Ethyl benzene	Not detected	mg/l	0.001	624
Methylene chloride	Not detected	mg/l	0.001	624
1,1,2,2-Tetrachloroethane	Not detected	mg/l	0.001	624
Tetrachloroethene	Not detected	mg/l	0.001	624
Toluene	Not detected	mg/l	0.001	624
1,1,1-Trichloroethane	Not detected	mg/l	0.001	624
1,1,2-Trichloroethane	Not detected	mg/l	0.001	624
Trichloroethene	Not detected	mg/l	0.001	624
Trichlorofluoromethane	Not detected	mg/l	0.001	624
Vinyl chloride	Not detected	mg/l	0.001	624
p,m-Xylene	0.003	mg/l	0.001	624
o-Xylene	0.004	mg/l	0.001	624



FECL #: AA03803 TAG: 1, 2 & 3 American Cyanamid AC313993

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids				
Acenapthene	Not detected	mg/l	0.1	EPA625
Acenapthylene	Not detected	mg/l	0.1	EPA625
Anthracene	Not detected	mg/l	0.1	EPA625
Benzidine	Not detected	mg/l	0.1	EPA625
Benzo(a)anthracene	Not detected	mg/l	0.1	EPA625
Benzo(b)flouranthene	Not detected	mg/l	0.1	EPA625
Benzo(k)flouranthene	Not detected	mg/l	0.1	EPA625
Benzo(ghi)pyrlene	Not detected	mg/l	0.1	EPA625
Benzo(a)pyrene	Not detected	mg/l	0.1	EPA625
Bis(2-chloroethoxy)methane	Not detected	mg/l	0.1	EPA625
Bis(2-chloroethyl)ether	Not detected	mg/l	0.1	EPA625
Bis(2-chlorisopropyl)ether	Not detected	mg/l	0.1	EPA625
Bis(2-ethylhexyl)phthalate	Not detected	mg/l	0.1	EPA625
4-Bromophenyl phenyl ether	Not detected	mg/l	0.1	EPA625
Butyl benzyl phthalate	Not detected	mg/l	0.1	EPA625
2-Chloronapthalene	Not detected	mg/l	0.1	EPA625
4-Chloro-3-methylphenol	Not detected	mg/l	0.1	<b>EPA625</b>
2-Chlorophenol	Not detected	mg/l	0.1	<b>EPA625</b>
4 Chlorophenyl phenyl ether	Not detected	mg/l	0.1	<b>EPA625</b>
4-Chlorophenyl phenyl ether	Not detected	mg/l	$0.\overline{1}$	EPA625
Chrysene	Not detected	mg/l	$0.\overline{1}$	<b>EPA625</b>
Dibenz(a,h)anthracene	Not detected	mg/l	$0.\overline{1}$	<b>EPA625</b>
Dibutyl phthalate	Not detected	mg/l	0.1	<b>EPA625</b>
Di-n-butylphthalate	Not detected	mg/l	0.1	EPA625
1,2-Dichlorobenzene	Not detected	mg/l	0.1	EPA625
1,3-Dichlorobenzene	Not detected	mg/l	0.1	EPA625
1,4-Dichlorobenzene		mg/1	0.1	EPA625
3,3'-Dichlorobenzidine	Not detected		0.1	EPA625
2,4-Dichlorophenol	Not detected	mg/l	0.1	EPA625
Diethyl phthalate	Not detected	mg/l	0.1	EPA625
Dimethyl phthalate	Not detected	mg/1	0.1	EPA625
4,6-Dinitro-2-methylphenol	Not detected	mg/l	0.1	EPA625
2,4-Dinitrophenol	Not detected	mg/l	0.1	EPA625
2,4-Dinitrotoluene	Not detected	mg/l	0.1	EPA625
2,6-Dinitrotoluene	Not detected	mg/l	0.1	EPA625
Di-n-octyl phthalate	Not detected	mg/l	0.1	EPA625
Fluorathene	Not detected	mg/l	0.1	EPA625
Fluorene	Not detected	mg/l	0.1	EPA625
Hexachlorobenzene	Not detected	mg/l	0.1	EPA625
Hexachlorobutadiene	Not detected	mg/l		EPA625
Hexachlorocyclopentadiene	Not detected	mg/l	0.1	EPA625
Hexachloroethane	Not detected	mg/l	0.1	
Ideno(1,2,3-cd)pyrene	Not detected	mg/l	0.1	EPA625
Isophorone	Not detected	mg/l	0.1	EPA625



FECL #: AA03803 TAG: 1, 2 & 3 American Cyanamid AC313993

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids	(continued)	<u> </u>		
Napthalene	Not detected	mg/l	0.1	EPA625
Nitrobenzene	Not detected	mg/l	0.1	<b>EPA625</b>
2-Nitrophenol	Not detected	mg/l	0.1	EPA625
4-Nitrophenol	Not detected	mg/l	0.1	<b>EPA625</b>
N-Nitroso-di-n-butylamine	Not detected	mg/l	0.1	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.1	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.1	EPA625
N-Nitrosodiphenylamine	Not detected	mg/l	0.1	EPA625
N-nitrosodi-n-propylamine	Not detected	mg/l	0.1	EPA625
Pentachlorophenol	Not detected	mg/l	0.1	EPA625
2-Methyl-4,6-dintrophenol	Not detected	mg/1	0.1	EPA625
Phenol	Not detected	mg/l	0.1	EPA625
Pyrene	Not detected	mg/l	0.1	EPA625
1,2,4-Trichlorobenzene	Not detected	mg/l	0.1	EPA625
2,4,6-Trichlorophenol	Not detected	mg/l	0.1	EPA625
2,4,0-1110110101101	2100 000000			
Organochlorine Pesticides &	Ŀ PCB			
Aldrin	Not detected	mg/l	0.0005	608
a-BHC	Not detected	mg/l	0.0005	608
b-BHC	Not detected	mg/l	0.0005	608
d-BHC	Not detected	mg/l	0.0005	608
Chlordane	Not detected	mg/l	0.0005	608
4,4'-DDD	Not detected	mg/l	0.0005	608
4,4'-DDE	Not detected	mg/l	0.0005	608
4,4'-DDT	Not detected	mg/l	0.0005	608
Dieldrin	Not detected	mg/l	0.0005	608
Endosulfan I	Not detected	mg/l	0.0005	608
Endosulfan II	Not detected	mg/l	0.0005	608
Endosulfan sulfate	Not detected	mg/l	0.0005	608
Endrin	Not detected	mg/l	0.0005	608
Endrin aldehyde	Not detected	mg/l	0.0005	608
Heptachlor	Not detected	mg/l	0.0005	608
Heptachlor epoxide	Not detected	mg/l	0.0005	608
Toxaphene	Not detected	mg/l	0.0005	608
PCB-1016	Not detected	mg/l	0.0005	608
PCB-1221	Not detected	mg/l	0.0005	608
PCB-1232	Not detected	mg/l	0.0005	608
PCB-1242	Not detected	mg/l	0.0005	608
PCB-1248	Not detected	mg/l	0.0005	608
PCB-1254	Not detected	mg/l	0.0005	608
PCB-1260	Not detected	mg/l	0.0005	608



FECL #: AA03803

Note: Methods may be modified for improved performance.

V. F. Mushoking

Violetta F. Murshak Laboratory Manager

FIRE & ENVIRONMENTAL CONSULTING

INVOICE

DATE 06/08/93 NUMBER AA03803

LABORATORIES, INCORPORATED

P.O. Box 992

Bast Lansing, MI, 48823

Federal Tax Number: 38-2690076

Phone: (517) 332-0167

Invoice To:

Report Sent To:

Attention: Financial Dept.

AA03803

City of Kalamazoo 241 W. South Street Kalamazoo, MI 49007 City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attention: Mr. Nasim Ansari

Purchase Order #: 056756

Project Description: Compliance Monitoring

C.O.C. #: 10590

1 Liquid Sample For:

Method 624 - Purgeables @ \$200.00/ea.

\$ 200.00

Method 625 - Semi-Volatiles @ \$400.00/ea.

(Includes Method 608 - Organochlorine Pest. & PCB's)

400.00

Cyanide @ \$40.00/ea.

40.00

Subtotal:

\$ 640.00

Less 20% Discount:

128.00

TOTAL INVOICE DUE:

\$ 512.00

Terms: Net 30 deld

Thank you for using our laboratory! If any questions arise, please call.

PLEASE RETURN TELLOW COPY OF INVOICE WITH PAYMENT. THANK YOU.

V.F. Mushokper

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DEPARTMENT OF PUBLIC UTILITIES	MPLER	S: •	Y REC	ORD			ANALYSIS:	REPORT FORM	No	10596
1415 N. Harrison Kalamazoo, Michigan 49007 616-385-8157	gnature)	VI.				Con	a Minne	M. Louis		
ITEM SAMPLE I.D. SAMP		NUMBER & SIZE OF CONTAINER	D A T	T I M E	C O M P	G R A B		ATION, DESCRIPTION REMARKS	DATE/TIME	DATE/TIME
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Form 1015			•							



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 East Lansing (517) 332-0167 Fax (517) 332-6333 Indianapolis (317) 577-8087 Fax (317) 594-9406

June 8, 1993

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 41517

Attention: Mr. Nasim Ansari

#### **Analytical Laboratory Report**

**Project: Compliance Monitoring** 

Samples collected by: J. STROMEZER Date/Time Submitted: 05/24/93 13:20

PO #: 056756

FECL #: AA03846 Tag: 1, 2 & 3 Amer. Cyanamid AC314093 Date/Time Collected: 05/20/93 08:40

Matrix: Liquid

Container(s): 40 mL Vial, 2-Amber Liter, 250 mL Plastic Preservation: None/NaOH\*/Refrigeration

\*Laboratory Preserved

\*\* Methods 624, 625 & 608 Higher Detection Limits Due to Matrix Interference



FECL #: AA03846 TAG: 1, 2 & 3 Amer. Cyanamid AC314093

Analysis	Results	Units	MDL	Method
INORGANICS			0.007	225 2 Tasket
Cyanide	Not detected	mg/l	0.007	335.2 Lachat
•				
Purgeables	NT.4 d.44.d	/1	0.03	624
Benzene	Not detected	mg/l	0.03	624
Bromodichloromethane	Not detected	mg/l	0.03	624
Bromoform	Not detected	mg/l	0.03	624
Bromomethane	Not detected	mg/l	0.03	624
Carbon tetrachloride	Not detected	mg/l		624
Chlorobenzene	Not detected	mg/l	0.03	624 624
Chloroethane	Not detected	mg/l	0.03	
2-Chloroethylvinyl ether	Not detected	mg/l	0.03	624
Chloroform	Not detected	mg/l	0.03	624
Chloromethane	Not detected	mg/l	0.03	624
Dibromochloromethane	Not detected	mg/l	0.03	624
1,2-Dichlorobenzene	Not detected	mg/l	0.03	624
1,3-Dichlorobenzene	Not detected	mg/l	0.03	624
1,4-Dichlorobenzene	Not detected	mg/l	0.03	624
1,1-Dichloroethane	Not detected	mg/l	0.03	624
1,2-Dichloroethane	Not detected	mg/l	0.03	624
1,1-Dichloroethene	Not detected	mg/l	0.03	624
trans-1,2-Dichloroethene	Not detected	mg/l	0.03	624
1,2-Dichloropropane	Not detected	mg/l	0.03	624
cis-1,3-Dichloropropene	Not detected	mg/l	0.03	624
trans-1,3-Dichloropropene	Not detected	mg/l	0.03	624
Ethyl benzene	Not detected	mg/l	0.03	624
Methylene chloride	Not detected	mg/l	0.03	624
1,1,2,2-Tetrachloroethane	Not detected	mg/l	0.03	624
Tetrachloroethene	Not detected	mg/l	0.03	624
	Not detected	mg/l	0.03	624
Toluene	Not detected	mg/l	0.03	624
1,1,1-Trichloroethane	Not detected	mg/l	0.03	624
1,1,2-Trichloroethane	Not detected	mg/l	0.03	624
Trichloroethene	Not detected	mg/l	0.03	624
Trichlorofluoromethane			0.03	624
Vinyl chloride	Not detected Not detected	mg/l	0.03	624
p,m-Xylene	Not detected Not detected	mg/l	0.03	624
o-Xylene	mot detected	mg/l	0.05	· ·



FECL #: AA03846 TAG: 1, 2 & 3 Amer. Cyanamid AC314093

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids				
Acenapthene	Not detected	mg/l	0.05	<b>EPA625</b>
Acenapthylene	Not detected	mg/l	0.05	EPA625
Anthracene	Not detected	mg/l	0.05	<b>EPA625</b>
Benzidine	Not detected	mg/l	0.05	<b>EPA625</b>
Benzo(a)anthracene	Not detected	mg/1	0.05	EPA625
Benzo(b)flouranthene	Not detected	mg/l	0.05	<b>EPA625</b>
Benzo(k)flouranthene	Not detected	mg/l	0.05	EPA625
Benzo(ghi)pyrlene	Not detected	mg/l	0.05	EPA625
Benzo(a)pyrene	Not detected	mg/l	0.05	EPA625
Bis(2-chloroethoxy)methane	Not detected	mg/l	0.05	EPA625
Bis(2-chloroethyl)ether	Not detected	mg/l	0.05	EPA625
Bis(2-chlorisopropyl)ether	Not detected	mg/l	0.05	EPA625
Bis(2-ethylhexyl)phthalate	Not detected	mg/l	0.05	<b>EPA625</b>
4-Bromophenyl phenyl ether	Not detected	mg/l	0.05	EPA625
Butyl benzyl phthalate	Not detected	mg/l	0.05	EPA625
2-Chloronapthalene	Not detected	mg/l	0.05	EPA625
4-Chloro-3-methylphenol	Not detected	mg/l	0.05	EPA625
2-Chlorophenol	Not detected	mg/l	0.05	EPA625
4-Chlorophenyl phenyl ether	Not detected	mg/l	0.05	EPA625
Chrysene	Not detected	mg/l	0.05	EPA625
Dibenz(a,h)anthracene	Not detected	mg/l	0.05	EPA625
Dibutyl phthalate	Not detected	mg/l	0.05	EPA625
Di-n-butylphthalate	Not detected	mg/l	0.05	EPA625
1,2-Dichlorobenzene	Not detected	mg/l	0.05	EPA625
1,3-Dichlorobenzene	Not detected	mg/l	0.05	EPA625
1,4-Dichlorobenzene	Not detected	mg/l	0.05	EPA625
3,3'-Dichlorobenzidine	Not detected	mg/l	0.05	EPA625
2,4-Dichlorophenol	Not detected	mg/l	0.05	EPA625
	Not detected	mg/l	0.05	EPA625
Diethyl phthalate Dimethyl phthalate	Not detected	mg/l	0.05	EPA625
4,6-Dinitro-2-methylphenol	Not detected	mg/l	0.05	EPA625
2,4-Dinitrophenol	Not detected	mg/l	0.05	EPA625
2,4-Dinitrotoluene	Not detected	mg/l	0.05	EPA625
2,6-Dinitrotoluene	Not detected	mg/l	0.05	EPA625
	Not detected	mg/l	0.05	EPA625
Di-n-octyl phthalate Fluorathene	Not detected	mg/l	0.05	EPA625
Fluorene	Not detected	mg/l	0.05	EPA625
Hexachlorobenzene	Not detected	mg/l	0.05	EPA625
Hexachlorobutadiene	Not detected	mg/l	0.05	EPA625
	Not detected	mg/l	0.05	EPA625
Hexachlorocyclopentadiene Hexachloroethane	Not detected	mg/l	0.05	EPA625
	Not detected	mg/l	0.05	EPA625
Ideno(1,2,3-cd)pyrene	Not detected	$\frac{mg}{1}$	0.05	EPA625
Isophorone	1101 40100104			



FECL #: AA03846 TAG: 1, 2 & 3 Amer. Cyanamid AC314093

Analysis	Results	Units	MDL	Method
Base/Neutral, Acids	(continued)	Oilts	WIDE	Mictilou
Napthalene	Not detected	mg/1	0.05	EPA625
Nitrobenzene	Not detected	mg/l	0.05	EPA625
2-Nitrophenol	Not detected	mg/l	0.05	EPA625
4-Nitrophenol	Not detected	mg/l	0.05	EPA625
N-Nitroso-di-n-butylamine	Not detected	mg/l	0.05	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.05	EPA625
N-Nitrosodimethylamine	Not detected	mg/l	0.05	EPA625
N-Nitrosodiphenylamine	Not detected	mg/l	0.05	EPA625
N-nitrosodi-n-propylamine	Not detected	mg/l	0.05	EPA625
Pentachlorophenol	Not detected	mg/l	0.05	EPA625
2-Methyl-4,6-dintrophenol	Not detected	$\frac{mg}{1}$	0.05	EPA625
Phenol	Not detected	mg/l	0.05	EPA625
Pyrene	Not detected	mg/l	0.05	EPA625
1,2,4-Trichlorobenzene	Not detected	mg/l	0.05	EPA625
2,4,6-Trichlorophenol	Not detected	mg/l	0.05	EPA625
2, 1,0 Themorephone	Tiot delected	-111 <sub>6</sub> / 1	0.03	22 71025
Organochlorine Pesticides &	PCB			
Aldrin	Not detected	mg/l	0.0005	608
a-BHC	Not detected	mg/l	0.0005	608
b-BHC	Not detected	mg/l	0.0005	608
d-BHC	Not detected	mg/l	0.0005	608
Chlordane	Not detected	mg/l	0.0005	608
4,4'-DDD	Not detected	mg/l	0.0005	608
4,4'-DDE	Not detected	mg/l	0.0005	608
4,4'-DDT	Not detected	mg/l	0.0005	608
Dieldrin	Not detected	mg/l	0.0005	608
Endosulfan I	Not detected	mg/l	0.0005	608
Endosulfan II	Not detected	mg/l	0.0005	608
Endosulfan sulfate	Not detected	mg/l	0.0005	608
Endrin	Not detected	mg/l	0.0005	608
Endrin aldehyde	Not detected	mg/l	0.0005	608
Heptachlor	Not detected	mg/l	0.0005	608
Heptachlor epoxide	Not detected	mg/l	0.0005	608
Toxaphene 1	Not detected	mg/l	0.0005	608
PCB-1016	Not detected	mg/l	0.0005	608
PCB-1221	Not detected	mg/l	0.0005	608
PCB-1232	Not detected	mg/l	0.0005	608
PCB-1242	Not detected	mg/l	0.0005	608
PCB-1248	Not detected	mg/l	0.0005	608
PCB-1254	Not detected	mg/l	0.0005	608
PCB-1260	Not detected	mg/l	0.0005	608



FECL #: AA03846

Note: Methods may be modified for improved performance.

V. F. Musholish

Violetta F. Murshak Laboratory Manager

FIRE & ENVIRONMENTAL CONSULTING

INVOICE

DATE 06/08/93 NUMBER AA03846

LABORATORIES, INCORPORATED

P.O. Box 992

Bast Lansing, MI, 48823

Federal Tax Number: 38-2690076

Phone: (517) 332-0167

Invoice To:

Attention: Financial Dept.

AA03846

City of Kalamazoo 241 W. South Street Kalamazoo, MI 49007 Report Sent To:

City of Kalamasoo 1415 N. Harrison Kalamasoo, MI 49007

Attention: Mr. Wasim Ansari

Purchase Order #: 056756

Project Description: Compliance Monitoring

C.O.C. #: 10599

1 Liquid Sample For:

Method 624 - Purgeables € \$200.00/ea.

\$ 200.00

Wethod 625 - Semi-Volatiles € \$400.00/ea.

(Includes Method 608 - Organochlorine Pest. & PCB's)

400.00

Cyanide @ \$40.00/ea.

40.00

Subtotal:

\$ 640.00

Less 20% Discount:

128.00

TOTAL INVOICE DUE:

\$ 512.00

Terms: Net 30 deld

Thank you for using our laboratory! If any questions arise, please call.

PLEASE RETURN YELLOW COPY OF INVOICE WITH PAYMENT, THANK YOU.

F. Mushale/pa

DEPARTMENT OF PUBLIC UTILITIES  WANTE NETTON MEDICAL MODIFICATION  THEM SAMPLE I.D. SAMPLE I.D. SAMPLE II.D.			.AMAZOO		MAIN	OF CUSTO	DY REC	OR	DA	ND	<b>LAB</b>	<b>ANALYSIS</b>	REPORT FORM	W.Co.	ፈርመለሽ
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CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES 10609 No SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 -ompliance Stromere 616-385-8157 DATE/TIME DATE/TIME D C ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION Ř 0 Α SAMPLE I.D. NUMBER М NUMBER OF CONTAINER М Α & REMARKS Ε Ε Р В AC2 American Garanid 14192 8'50AM 24A 51 61040 RECEIVED BY: (Signature) RECEIVED (Signature) DATE/TIME 9₹: ΒΥ: 3 RELINQUISHED ( (Signature) 4 RELINQUISHED ( (Signature) Am DATE/TIME RESULT | TRACE METALS RESULT ORGANIC COMPOUNDS RESULT GENERAL/CONVENTIONAL UE (ua/L) CADMIUM ρН **EPA METHOD 601** 0.6 BODTOTAL CHROMIUM < 100.0 CBOD HEX. CHROME COPPER COD 90.0 TSS LEAD 6.9 VSS NICKEL 60.0 ZINC EPA METHOD 602 NH<sub>3</sub>-N 103.7 SILVER TOTAL P 0.5 9 OHTRO MERCURY 0.5 GREASE/OIL BERYLLIUM BARIUM CHLORIDE REMARKS: CN - TOTAL **CN - AMENABLE** OTHER 22-Jun-93

Form 1015

# MAZOO WATER RECLAMATION R. 'T

### CONFIDENTIAL

Company: Unercan Cya	ramid	Date: /2-11-/	
Address: 2715 miller	Rol	Inspector(s)	Ward
City/Zip: Kalamazoo,	49003	· ·	11-91
Phone: 349-6677	= 10 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Representative/Title: Representative/Title:	bert Greene L maxwell		
	- maximely		<del></del>
Original Non-Domestic User Surv	vey (NDUS) date:_	updated	:
Previous Inspection date: 12-	4-90		
Codes designating source of inf Rep = Company Representative,			Survey,
I. GENERAL INFORMATION			
1. Nature of business: Note	- this is	in inspection of	onl
categorial process - m			
2. SIC Code: 28214 spe			
3. Industrial Pretreatment Category:	Sulpart E	414.55 PSES	-
Due to complexity of this facili	1		
4. Schedule of Operation:	<i>V</i> .		
	ts/day/m	onths/year	-

1.	Items on Critical Materials List or Priority Pollutants List from NDUS:
	ice attached sampling history-note previous to the Excenter
Addi	tional from I.O: 1991 sampling, results are at end of pipe
	bratui
2.	Description of processes: see attached chemical flow chart
7	dragion of process. The location of major reactor vessels.
	are noted on attached alreprint of building # 4 which is
	used exclusively for methylated melamine resurs. main process
	flows are cleanups, floor and nessel masherps, drum cleanups
-	felter backwach water, domestic flows, boiler blowdown.
	On the attached facility bluepunt, building # 5 is office
	space and control room center for methylated resin production.
	Bulding # 6 is both a druming operation for Cynel 303 Resan
	and a wharehouse for drum storage. There is a drum cleaning
	assertion in Building H 6 with wealings containing methylated
	resins also being discharged to simp # 3. ( see codification process obscurption
3.	Information considered confidential: all information is to
	he considered confidential especially process descriptions
<del></del>	sol they are trade socreto
4.	Water supply and consumption: specific mater consumption is
	not metered, with come for this specific process and
	ump location, water used is both municipal and well water
	plows in summy are estimates based upon equipment
	design on, measured cleanups, or equipment um times

#### III. PROCESS WASTEWATER

1.	Outfalls (storm, surface, etc.): see attached bluepunts
Desc	cription and drawings of process flow and floor drains to each outfall.
	all flows from buildy discharges to sump # 3 highlighted an bluepunt
2.	Volumes of discharge (Average Daily, Maximum Daily, Method of Measurment).
	see attached summay of monthly total flows for sump #3
	process runs 7 days a week so average daily = total flow/ 30
	see attached daily sumary - flows per day vary between
	see attached daily sumary - flows per day wary hetween 12% of flow can be considered 95,000 + 100,000 gallono/da delution - note rooks water blowdom is used in process
3.	Type of wastewater:
	A. % Process 8870  B. % Cooling 0
	C. & Sanitary 7/70  D. & Other 12 - Acrubbers  and Deumier  Bockmoh
	I.O. see attached flow summy Bockunch
4.	Drains (roof, parking lot, etc.) discharging to sanitary sewer and estimated area drained:
	mone

#### IV. DISPOSAL PRACTICES

1. Disposal of spent chemicals and volumes: - some apart chemials are
reblevoled into new products - see company exploration
attached
?. Disposal of spoilage and volume: not applicable
3. Disposal of precipitates and sludges: all precipitates & sludges.
are either handed afforte or if one of permetted process, minur
1. Name and license number of waste hauler: A+B Industrial services
Terra Environatal
5. Pretreatment Techniques: pH is automatically adjusted at the
sump by acid or constre injection prior to discharge
-
6. Air emission control equipment with a wastewater discharge:
yes - ani sanbber - average 11,500 gallons per
daz
7. Materials listed in Tables I that are discharged(Item II,1):
see atlached sample history

1. Bulk material stored on site (include volumes): see attached summy
moledy process took volues
2. Is there any secondary containment for bulk materials? semi - contamid
flows of spills would be sungs for materials centaried in process buildings, all surps have bill switchs
3. Is there secondary containment for processes which contain materials from Table I?
Sel 2 about
4. Separate storage for chemicals which cause hazardous reactions? 400
5. Does facility have a Spill Prevention Control and Counter Measures Program (SPOC) CFR 112 or a Pollution Incident Prevention Plan (PIPP) MDNR Rule 5?
VI. SAMPLING AND ANALYSIS
1. Description of sampling points for each process and/or process outfall: (describe source and volume of any non-process flow through sample point).
for categorisal rompliance determination the following sample points will be added in 1992
Coolé location process
AC3 process sump # 3 methylated melanie Resin
AC2 process sump#1 Butylated melanine Resin

V. SPILL PREVENTION:

2.	Processes and/or outfalls which do not have a suitable sampling point:
3.	Company's Sampling program: - see company's self-monitor requirement company regularly samples for tolere, NH3, inspectional suspended solids, COD and PH
4.	Laboratory analyses available on site: see 3 above

#### VII. MISCELLANEOUS

1. Safety precautions:

- 1. contaminent of process buildings aloes not seem completely andequate since it depends an operator response to centain spills by shutting down sumps. Company will address concerns in 1992
- 2. pH wishations and missed compliance dates in 1991 were shall with by enforcement action welleding NOAP proceedings, (see NOAP file). PH excursions were solved by equipment installation on surp # 3

General coord of landing of 61

process information. This informed submided upstabled the subserved the subserved the information abbound the subserved the subserved the subserved because their subserved to be subserved to be subserved to be subserved to be subserved to the substruction and the subserved to t

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produced at the focility. Ofter a extense remember is only considered on the products ), only the products one considered representation one considered representation of the products one considered representations.

4 Ac3) will be produced for 1992 Maso hims numbers for soch production sumpl ACS a new form that will calculated categorical no production hoosed loadings numbers uses produced. Desember, 1991 showed 18th for all OCPSF parameter sampled at centined and of pipe (ACI) there the Limbs. Messens to this, amousen yoursmid was only organi peremetero. Notalo sealto more also sebenand 12,720-91. Rounts show BLD for all OCPSF ( hutylated netomne som ) were sompled on 12-17-91 Army # 3 ( nothylated nolomis Don ) and Sump # 1 these process amps have smoothed shown Bh D. 9.9 ppm. All analyon sondheled for Tollione at the surroged 13 ppm tolliers and well & hos averaged doneron yourmed. For the look year well # 1 has sontumed by the monthly reports sont to this office by Ale two groundwater remodration punge mello. This ro The mas tollions. All tollions shortongs is from Ine parameter did show renardantz high roult

#### AMERICAN CYANAMID COMPANY CONFIDENTIAL

#### III. Floor Plan

A floor plan of the interior of Building 4 is attached. Identification of tanks and reactors in the floor plan are listed below.

Tank Number	Description	Volume (GAL)
140-024	2nd Stripper Condensate Receiver	250
140-001	2nd Methylator	1200
140-011	2nd Neutralizer	2400
130-041	3rd Methylator	2200
140-031	Filter Feed Tank	2000
130-067	Formaldehyde Column Reflux tank	5000
120-041	Methanol Column Feed tank	5000
130-073	Formaldehyde Column feed tank	1600
130-075	Deionizer	500 (DI Resin Filled)
120-031	Surge Tank	5000
120-011	Admix tank	2500
120-015	1st Stripper condensate receiver	250
140-038	Sparkler Filter	
140-039	Cake Reslurry tank	1000
140-047	Waste cake dissolving tank	300
140-043	Recycle Wash Tank	300
140-056	Body Feed Tank	250
140-054	Precoat Tank	250

#### IV. Spill Prevention

Tanks and vessels containing hazardous materials are equipped with level indicators and in some cases automatic shutoffs. These are visible to an operator in the control room and have high level warning indicators. In the event of an incident causing a release in building 4 from overfilling a tank, the control room operator can stop flow to the tank.

Potential releases inside the building from incidents other than tank overfill will be observed by an operator in the building. The plant is trained to immediately stop pumping from Effluent 3 in this event.

Tanks in diked areas are equipped with high level indicators and in some cases with high level shut off devices to prevent spills from overfilling of tanks. In the event of a spill to a diked area, it is plant policy to recover the spilled material and rework it.

- 2. The majority of the products produced in the Kalamazoo Plant are not hazardous. Off-grade products are usually recovered by blending with on-grade products. Off-grade products that cannot be recovered in this manner are disposed of in the following manner:
  - a. Small amounts of non-hazardous flocculants for water, mining or paper treating may be dissolved in water and discharged to the sanitary sewer, and
  - b. Products that cannot be dissolved or are not flocculants are disposed of in a secure landfill or by incineration.
- 3. Solids from the effluent of the Specialty Chemicals Department and the former alum operation have settled out in our surface impoundments. Alum muds (solids from alum production) were disposed in off-site landfills. Solids in impoundments 3 and 4 (from the Specialty Chemicals Department) have remained in the impoundments. We have submitted plans to close these impoundments to the MDNR.
- 4. Name of waste hauler:

Hazardous wastes are hauled by several firms. Firms currently being used are listed below:

Great Lakes Environmental Services 22077 Mound Road Warren, Michigan 48091 EPA ID No. MID087478574

Chemical Waste Management 4300 West 123rd Street Alsip, Illinois 60658 EPA ID No. ILD00806604

Valley City Refuse Disposal 2640 Thornwood, S.W. Wyoming, Michigan 49509 EPA ID No. MID055855373

Taplan Enterprises (A&B Industrial Services) 5070 West Michigan Avenue Kalamazoo, Michigan 49007 EPA ID No. MID017167222

NOTE: The above list is a partial listing of Waste Haulers and is subject to change.

#### American Cyanamid Monthly Flow Summary

#### Additional

Month	Sump #1	Sump #2	Sump #3	Flows	Total
September, 1991	1,201,450	332,434	2,906,800	499,328	4,940,012
August, 1991	1,434,367	450,000	2,830,800	314,586	5,029,753
July, 1991	1,263,046	487,914	2,733,200	265,843	4,750,003
June, 1991	1,020,001	490,233	3,196,100	461,469	5,167,803
May, 1991	1,342,311	191,052	3,053,500	522,392	5,109,255
April, 1991	1,224,545	411,766	2,922,900	511,065	5,070,276
March, 1991	1,381,431	438,349	3,242,700	583,471	5,645,951
February, 1991	895,343	476,425	3,075,800	614,797	5,062,365
January, 1991	1,056,387	306,881	2,725,300	639,484	4,728,052
December, 1990	1,281,344	280,460	2,087,300	608,739	4,257,843
Monthly Average	1,210,023	386,551	2,877,440	502,117	4,976,131
Daily Average	40,334	12,885	95,915	16,737	165,871
% of Total Flow	24%	8%	58%	10%	

<sup>\*</sup> Flows measured in gallons.

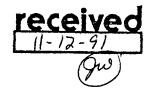


## ATTACHMENT 3 1. Bulk Material Storage Page 2

Raw Products	Amount Stored	Plant Location
Hydrochloric acid	8,000 Gal (Bulk) 100 Gal (Drum)	Building 3 Tank Farm Building 7
Isopropanol	500 Gal (Drum)	Building 7
Methanol	50,000 Gal (Bulk)	Building 4 Tank Farm
	30,000 Gal (Bulk)	Building 4 Tank Farm
Melamine	500,000 Lbs (Bulk)	Building 4 Tank Farm
	40,000 Lbs (Bag)	Building 3
Methyl Formcel	90,000 Gal (Bulk)	Building 4 Tank Farm
Modified polyacrylamide	4,000 Gal (Bulk)	Building 3
Nitric Acid	1,400 Gal (Bulk)	Building 3 Tank Farm
	17,000 Gal (Bulk)	Building 4 Tank Farm
Phenoxyethanol	55 Gal (Drum)	Building 3
Pine Oil	100 Gal (Drum)	Building 7
Sodium bicarbonate	10,000 Lbs (Bag)	Building 3
Sodium hypochlorite	100 Gal (Drum)	Building 7
Sodium hydroxide, 50%	25,000 Gal (Bulk)	Building 3
	17,000 Gal (Bulk)	Building 4 Tank Farm
	100 Gal (Drum)	Building 7
Sugar	800 Lbs (Bag)	Building 3
Sulfuric Acid	500 Gal (Drum)	Building 3



American Cyanamid Company Polymer Products Division P O Box 3309 Kalamazoo, MI 49003 (616) 349-6677



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

November 8, 1991

Mr. John Ward Industrial Pretreatment Inspector Department of Public Utilities 1415 North Harrison Kalamazoo, Michigan 49007-2565

Dear Mr. Ward:

I believe that the classifications for three of the products listed in your letter of October 22, 1991, should be changed.

Cyanamer P-35 and Cyanamer P-70 are hydrolyzed acrylamide polymers and should not be included in the categorical standard under Subpart D-Thermoplastic Resins. In addition, these products are water treatment chemicals and are classified under SIC 28995. As such, they should not be included in the requirements for Categorical standards.

Magnifloc 2535CH is a polyacrylamide solution used for water treatment and paper. It is classified under SIC 28995 and not 28214. Parez 631 NC is a paper chemical and is classified under SIC 28995. The categorical standards for Subpart E are for SIC 28214. Effluent from Magnifloc 2535CH and Parez 631 NC would not be regulated under Subpart E. Parez 631 NC is not produced at this location, but may be in the future.

I believe the self-monitoring program can best be accomplished by sampling for the Subpart E standards at one location using the combined waste stream formula under the provisions of 40 CFR 403.6(e)(2).

If you have any questions concerning this communication, please contact me.

Sincerely.

Dr. Robert L. Greene Technical Superintendent

RLG/bjr

# **Environmental Alert**

October 20, 1989

#### FIFTH CIRCUIT STRIKES DOWN OCPSF REGULATIONS

In a stunning reversal of its March 30, 1989, decision, <u>CMA v. EPA</u>, 870 F.2d 177 (5th Cir. 1989), the U.S. Court of Appeals for the Fifth Circuit has struck down a portion of the effluent limitations guidelines for the organic chemicals, plastics, and synthetic fibers (OCPSF) industry. The Fifth Circuit issued its revised decision in response to a CMA petition for reconsideration, filed in May 1989 after the Court rejected industry's challenges to the OCPSF regulations.

In the revised decision, issued October 10, 1989, the Fifth Circuit ruled that the U.S. Environmental Protection Agency (EPA) unlawfully relied on treatment data from large end-of-pipe biological systems to derive best available technology/subcategory 2 (BAT2) standards and pretreatment standards after identifying small in-plant biological systems as the model technology. The Court's decision affects the BAT2 and pretreatment standards for 20 chemicals (list attached), or one-third of the BAT2 standards and more than 40 percent of the pretreatment standards in the OCPSF regulations. Those regulations, promulgated November 5, 1987, at 40 C.F.R. Part 414, establish technology-based standards for new and existing OCPSF facilities discharging into waters of the U.S. and municipal treatment works.

With the Fifth Circuit's decision in this case now final, EPA can be expected to begin new rulemaking proceedings on the 20 remanded BAT2 and pretreatment standards in the not-too-distant future. In the meantime, CMA will begin reassessing its options for appealing the remainder of this litigation to the Supreme Court.

For further information, contact Dell E. Perelman, CMA Counsel, at 202/887-1162 or Emily M. Currie, CMA Hanager, Water and Groundwater Programs, at 202/887-1103.



#### CHEMICALS FOR WHICH BAT2 AND PRETREATMENT STANDARDS HAVE BEEN REMANDED

acenaphthene
2,4-dimethylphenol
naphthalene
bis(2-ethylhexyl)phthalate
diethyl phthalate
benzo(a)anthracene
3,4-benzoflurouanthene
acenaphthylene
anthracene
phenanthrene

acrylonitrile
luoranthene
phenol
di-n-butyl phthalate
dimethyl phthalate
benzo(a)pyrene
chrysene
anthracene
fluorene
pyrene

December 3, 1991

Dr. Robert L. Greene Technical Superintendent American Cyanamid Company 2715 Miller Road Kalamazoo, MI 49001

#### Dear Dr. Greene:

In an effort to clarify which processes at your plant are regulated under the OCPSF regulations, I have summarized which products this office considers categorical. Please review this list and respond as to your agreement or disagreement with these classifications. Due to the complicated nature of these regulations and your technical expertise in the specific processes under review, an explanation of the regulatory status of these processes, as you view them, would also be appropriate.

Product Name	Product Description	OCPSF Subpart	Justification
Cymel 303	Methylated Melamine Resin	Subpart E Thermosettings Resin	Specifically listed under SIC 28214 (see attached)
Cymel 1130	Butylated Melamine Resin	Subpart E Thermosettings Resin	Specifically listed under SIC 28214 (see attached)
Magnifloc 2535CH	Polyacrylamide solution	Subpart E Thermosettings Resin	Specifically listed under SIC 28214 (see attached)
Parez 631NC	cross linked Polyacrylamide	Subpart E Thermosettings Resin	Specifically listed under SIC 28214 (see attached)
Cyanamer P35,P70	Sodium Polyacrylates	Subpart D Thermoplastic Resins	Monomer of Acrylic Resin

Dr. Robert Greene October 22, 1991 Page 2 of 2

The remaining processes at your facility are excluded from categorical consideration either due to the products not being included in the specific SIC groupings or the operations are of a blending or mixing nature only.

Please respond by November 8, 1991 with your appraisal of these classifications. If you have any questions, please contact me at 337-8708.

Sincerely,

John Ward Industrial Pretreatment Inspector

c: K. Mottinger T. Meulenberg file

Parameter	VALUE	Units	Sample Date
1,1-DICHLOROETHANE	2.500	ug/l	01/17/91
Mean	2.500		
Parameter	VALUE	Units	Sample Date
1,1-Dichloropropene	1.200	ug/l	01/16/91
Mean	1.200		
Parameter	VALUE	Units	Sample Date
BENZENE	0.430 0.370 17.000	ug/l ug/l ug/l	01/16/91 01/17/91 01/18/91
Mean	5.933		
Parameter	VALUE	Units	Sample Date
BROMOFORM	27.000	ug/l	01/16/91
Mean	27.000		
Parameter	VALUE	Units	Sample Date
CHLOROBENZENE	2.700	ug/l	01/16/91
Mean	2.700		
Parameter	VALUE	Units	Sample Date
CHLOROFORM	3.000	ug/l	01/17/91
Mean	3.000		
Parameter	VALUE	Units	Sample Date
CIS-1,2-DICHLOROETHENE	1.300	ug/l ug/l	Ø1/16/91 Ø1/17/91
Mean	1.150		
Parameter	VALUE	Units	Sample Date
CYANIDES	4.380 4.050 7.340	ug/l ug/l ug/l	01/16/91 01/17/91 01/18/91

Parameter	VALUE	Units	Sample Date
	0.000	ug/l	10/10/91
Mean	3.942		
Parameter	VALUE	Units	Sample Date
ETHYLBENZENE	2.400 2.500 3.500	ug/l ug/l ug/l	01/16/91 01/17/91 01/18/91
Mean	2.800		, ,
Parameter	VALUE	Units	Sample Date
FORMALDEHYDE	590.000 550.000 830.000	mg/l mg/l mg/l	01/16/91 01/17/91 01/18/91
Mean	656.667		
Parameter	VALUE	Units	Sample Date
LEAD	5.000 8.000 15.000 0.000	ug/l ug/l ug/l ug/l	01/16/91 01/17/91 01/18/91 10/10/91
Mean	7.000		Sample
Parameter	VALUE	Units	Date
PCB'S	0.000	ug/l	10/10/91
Mean	0.000		
Parameter	VALUE	Units	Sample Date
TETRACHLOROETHYLENE; PERCHLORO	3.700	ug/l	01/16/91
Mean 5	3.700		
Parameter	VALUE	Units	Sample Date
TOLUENE	420.000 980.000 560.000	ug/l ug/l ug/l	01/16/91 01/17/91 01/18/91
Mean	653.333		

# Organics Data for American Cyanamid 1991

Parameter	VALUE	Units	Sample Date
TRICHLOROETHYLENE	3.700 1.700	ug/l ug/l	01/16/91 01/17/91
Mean	2.700	497 1	V1/11/31
Parameter	VALUE	Units	Sample Date
XYLENE	8.700 8.600 1.600	ug/l ug/l ug/l	Ø1/16/91 Ø1/17/91 Ø1/18/91
Mean	6.300		
Parameter	VALUE	Units	Sample Date
ZINC	140.000 219.000 59.000 110.000	ug/l ug/l ug/l ug/l	01/16/91 01/17/91 01/18/91 10/10/91
Mean	132.000		

permit appropriate projects in which wetlands are used to treat wastewater effluent. Until the criteria are developed, the October 1987 report and the September 1988 Office of Water guidance on the use of constructed and created wetlands in municipal wastewater treatment and disposal are valuable references for the states.

-Robert Bastian, Office of Municipal Pollution Control, U.S. Environmental Protection Agency, Washington, D.C.

# EPA Offers Guidance for Monitoring in the OCPSF Industry

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 he regulation (Fed. Reg., 52, 42522, Nov. 5, 1987) of process wastewater being discharged by plants manufacturing organic chemicals, plastics, and synthetic fibers (the OCPSF industry) requires stringent control of up to 56 organic priority pollutants (PriPols). These are listed in Table 1. Analyzing wastewater samples for these PriPols at very low concentrations is expected to increase monitoring costs for many OCPSF plants. A guidance document to assist permitting authorities in developing cost-effective monitoring requirements is being prepared by EPA's Industrial Technology Division.

#### **MONITORING REQUIREMENTS**

In interpreting the Clean Water Act, EPA has decided that every NPDES discharge permit issued under a subcategory must contain all of the pollutants that were regulated in that subcategory. Direct dischargers in the OCPSF industry were regulated under two subcategories: those using biological treatment and those using other treatment technologies.

At a minimum, direct dischargers must analyze a treated effluent sample for all PriPols on their permit and report once a year (40 CFR, Part 122.44[i][2]). Those plants discharging to a POTW (indirect dischargers) must report analyses for PriPols regulated under pretreatment subcategories at least twice a year (40 \*\*\* CFR, Part 403.12[e][1]). The NPDES regulations are not specific about monitoring requirements beyond these minimums. Historically, additional requirements have involved judgement calls by the permitting authority on a permit-bypermit basis, taking several factors into consideration.

Control of all regulated PriPols is an important consideration to a permitting authority. A permittee's additional monitoring costs will be related to monitoring

Table 1—OCPSF-regulated organic PriPols.

Code	Organic PriPol	Code	Organic Pripol
01	Acenaphthene	44	Methylene chloride
03	Acrylonitrile	45	Methyl chloride
04	Benzene	52	Hexachlorobutadiene
06	Carbon tetrachloride	55	Naphthalene
07	Chlorobenzene	56	Nitrobenzene
80	1,2,4-Trichlorobenzene	57	2-Nitrophenol
09	Hexachlorobenzene	58	4-Nitrophenol
10	1,2-Dichloroethane	59	2,4-Dinitrophenol
11	1,1,1-Trichloroethane	60	4,6-Dinitro-o-cresol
12	Hexachloroethane	65	Phenol
13	1,1-Dichloroethane	66	Bis(2-ethylhexyl) phthalate
14	1,1,2-Trichloroethane	68	Di-n-butyl phthalate
16	Chloroethane	70	Diethyl phthalate
23	Chloroform	71	Dimethyl phthalate
24	2-Chlorophenol	72	Benzo(a)anthracene
25	1,2-Dichlorobenzene	73	Benzo(a)pyrene
26	1,3-Dichlorobenzene	74	3,4-Benzofluoranthene
27	1,4-Dichlorobenzene	75	Benzo(k)fluoranthene
29	1,1-Dichloroethylene	76	Chrysene
30	1,2-t-Dichloroethylene	77	Acenaphthylene
31	2,4-Dichlorophenol	78	Anthracene
32 .	1,2-Dichloropropane	80	Fluorene
33	1,3-Dichloropropylene	81	Phenanthrene
34	2,4-Dimethylphenol	84	Pyrene
35	2,4-Dinitrotoluene	85	Tetrachloroethylene
36	2,6-Dinitrotoluene	86	Toluene
38	Ethylbenzene	87	Trichloroethylene
39	Fluoranthene	88	Vinyl chloride

Note: Although limitations were promulgated for bis(2-Chloroisopropyl) ether (PriPol 42), the limitations were subsequently revoked (Fed. Reg., 54, 27351, June 29, 1989).

frequency and the number of PriPols to be analyzed. To require a permittee to monitor frequently for all of the regulated PriPols, even those not expected to be present in a plant's combined process wastewater, could be considered an excessive and unnecessary regulatory burden. By monitoring more frequently for those PriPols that have initially been demonstrated to be characteristic of a plant's wastewater, the permitting authority would have reasonable assurance that all of the regulated PriPols are being controlled, without requiring the permittee to routinely analyze for those that are unlikely to be present.

When EPA estimated the compliance monitoring burden associated with the OCPSF regulation, it considered this concept (OCPSF Dev. Doc., 2, Chap. VIII, 198). It assumed that four samples per month would be monitored. One sample would be analyzed for all OCPSF-

regulated PriPols, while the other three samples would be analyzed for a limited number of specific PriPols; this number would vary from four to 15, depending on flow.

runtar continuation section are difficult to the expected to submit of the plants characteristics and the plants characteristics are plants of the plants characteristic and your data flowever, it may be difficult for an applicant to produce sufficient data that, taken alone, would support such a list to the satisfaction of the permitting authority.

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Table 2-OCPSF	products and	affiliated	PriPols.
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OCPSF products	Affiliated PriPols
SYNTHETIC FIBERS	· · · · · · · · · · · · · · · · · · ·
Acrylic (85% Polyacrylonitrile)	03
Modacrylic	. 03, 29, 88
PLASTICS (RESINS)	
ABS, SAN, ABS-SAN	03, 38
Petroleum hydrocarbon	04, 38, 86
Phenolic	65
Polycarbonate	44, 65
Polyethylene (HDPE, LDPE)	04
Polystyrene	38
Polyvinyl chloride (PVC)	88
ORGANIC CHEMICALS	
Acrylonitrile	03
Aniline	56, 57, 58, 65
Benzene (from pyrolysis gasoline BTX)	04, 34, 38, 55, 65, 86
Benzene (from PriPol 86)	04, 38, 86
Bisphenol A	65
1,3-Butadiene (from C4 steam pyrolyzates)	04, 38, 86
Carbon tetrachloride (from PriPol 45)	06, 23, 44, 45
Carbon tetrachloride (from PriPol 10 and	06, 10, 11, 12, 13, 14,
chlorinated C1, C2)	29, 85, 87
Chlorobenzene	04, 07, 25, 27
Coal tar crudes: creosote oil, tars (road	01, 34, 39, 55, 65, 72,
materials and others), and pitches	<i>74, 75, 76, 77, 78,</i> 80,
	81,84
Cumene	04, 38, 86
1,2-Dichloroethane (via chlorination)	06, 10, 11, 12, 13, 14,
	23, 29, 30, 85, 87
1,2-Dichloroethane (via	10, 13, 14, 16, 23, 29,30,
oxyhydrochlorination)	31, 32, 44, 45, 65, 87
Dinitrotoluenes (mixed isomers)	35, 36, 56, 60, 65, 86
Ethylbenzene	04, 38, 86
Ethylene and propylene:	
When cracker feed is ethane/propane (LPG)	04, 34, 38, 65, 86
When cracker feed is naptha, gas oil	04, 34, 38, 55, 65, 86
Methyl chloride (from methane)	06, 23, 44, 45
Methyl chloride (from methanol)	45
Nitrobenzene	04, 56, 57, 58, 65
Phenol (from cumene hydroperoxide)	65
· maidic obtain	
Butyloctyl phthalate	68
Di-(2-ethylhexyl) phthalate	66
Dimethyl phthalate	71
Styrene	04, 38, 86
Tetrachloroethylene (perchloroethylene)	06, 10, 11, 12, 14, 29,
No. 1 11 (1 11 11 11 11 11 11 11 11 11 11 1	52, 85, 87
Vinyl chloride (chloroethylene)	06, 10, 44, 45, 88
Xylenes, mixed (from pyrolysis gasoline BTX)	04, 34, 38, 55, 65, 86

#### AFFILIATING PRIPOLS WITH OCPSF PRODUCTS

For the guidance document, Hugh Wise of EPA developed a list of OCPSF products that are likely to be affiliated with the regulated PriPols. The affiliations were based on Wise's understanding of the process chemistry, process descriptions that are available in the technical literature, responses by the OCPSF industry to EPA questionnaires, and Wise's interpretation of the analyses of numerous process wastewater samples taken at OCPSF plants. Examples of these affiliations are presented in Table 2; code numbers assigned to PriPols in Table 1 indicate the expected affiliates with each product.

In using this guidance to establish the characteristic PriPols at a plant, it should be emphasized that the affiliations are conservative estimates, and should not be taken as more than presumptive. They equic confirmation by contract analysis of several samples then

counties in a treatment of the counties of the

Confirmation by analysis of treated effluent samples is generally impractical because the treatment systems in OCPSF plants often reduce the concentrations of PriPols below detection limits. In addition to confirming expected PriPols, analyses of the combined process wastewater before treatment can reveal plant-specific contaminants of raw materials, solvents, and by-products, as well as other PriPols that are extraneous to the process chemistry.

भावा साम्युक्षका ् सह बन्मानिकार्यन तन्त्रपुरिवादम्बद्धारस्य स्थापन्तास्याम् । श्रामुद्धारम्बद्धारस्य स्थापन्तास्य exclusifications are a serious contempts of the ए अन्दर्भुभोग्रन विज्ञास्त्र । अ<mark>तास्त्र</mark> । विज्ञास nomalous of the dicingual themen. Figuring a processes of the following the first ses of the planes wastewater. While some anomalous PriPols may genuinely be characteristic of the plant's wastewater, others may be artifacts of the reporting laboratory's analytical system, analytical procedures, or both. Anomalies are useful, not only to check the accuracy of analyses, but also to indicate whether a modified or alternate analytical procedure may be arecessary. Alternate procedures should be validated in treated effluent, as that is the sampling site where the data reliability needs to be assured for future monitoring reports.

Information on the guidance document is available from Hugh Wise, EPA Industrial Technology Division (WH-552), 401 M St., S.W., Washington, DC 20460; (202) 382-7177.

—Christopher R. Powicki, Associate Editor plants for sampling during the EPA/CMA Five-Plant Study and the subsequent Twelve Plant Study based in part upon the known or suspected presence of certain priority pollutants at significant concentrations in plant wastewaters. As a result, the existing BAT data base adequately represents priority pollutant discharges by the entire OCPSF industry.

The current BAT data base also provides broad coverage of the major wastewater treatment technologies employed by the OCPSF industry. The Verification Study emphasized data collection on raw process wastewaters. and the principal treatment configurations (i.e., preliminary treatment and biological treatment) for combined plant wastewaters. The EPA/-CMA Five-Plant Study was designed toassess the effectiveness of biological treatment in removing organic priority. pollutants. The final phase of the sampling program, the Twelve Plant Study, provided additional data on the state of the state many ponbiological treatment technologies, including in-plant controls and end-of-pipe treatment technologies, and supplemental long-term performance data for other treatmenty. technologies.

In developing its BAT data base, EPA did not sample wastewaters and treatment aystems for all plants in the OCPSF industry. The considerable expense associated with the sampling of toxic pollutants, especially organic. pollutants, has imposed practical constraints on the scope of OCPSF sampling programs Resource concerns also reflect the need for rigorous quality. assurance/quality control procedures (e.g., blank samples, duplicate samples, etc.) at each stage of sampling/analysis to ensure the highest possible quality for sampling data. These procedures of the significantly increase the cost of sampling and analysis. As a result, the OCPSF sampling program has been designed with the intention of collecting the greatest possible quantity of data without sacrificing data quality.

Due to its concern that the earlier versions of the BAT data base may not adequately address the variety of priority pollutant loadings in OCPSF industry wastewaters, EPA has at each stage in the rulemaking solicted additional data on the presence, concentrations, and treatability of priority pollutants in OCPSF plant wastewaters. Valid data (as determined by editing and quality assurance rules) submitted by industry were incorporated in the BAT data base and utilized in the calculation of BAT effluent limitations. During the OCPSF

rulemaking efforts each affected OCPSF plant or industry segment had the opportunity to comment and submit sampling data which it believed should be added to the data base considered by EPA.

Finally, it should be noted that the number of plants from which data are used to develop BAT limitations is necessarily limited by the fact that a large portion of the industry does not currently have well-designed, well-operated BAT treatment in place. Since BAT must be based upon the best available technology in the industry, the data must inevitably be limited to only the best performers in the industry.

4. Establishment of Effluent Limitations and Monitoring Requirements in NPDES Permits for OCPSF Facilities

Comment: Some commenters have argued that a plant should be subject to limitations only for those pollutants that it discharges at significant levels. They argue that the imposition of limits will inevitably result in compliance monitoring for pollutants that are not present in the discharge, and that this imposes unnecessary costs. In the July 17, 1985 Notice, EPA sought to address this concern by proposing a monitoring scheme whereby monitoring for pollutants could be describedly reduced it preliminary monitoring and other information indicated that the pollutants would not be discharged at significant levels.

The July 17, 1985 proposal of a monitoring scheme provoked substantial comments from both sides of the issue. Some argued that the scheme required more initial monitoring than was necessary to determine whether pollutants were likely to be present in the discharge during the permit term. Many of these commenters also argued that EPA's test for determining which pollutants would require more frequent monitoring was too stringent (i.e., too inclusive). In contrast, one commenter argued that the test did not adequately account for discharge variability and thus would result in the incorrect conclusion that certain pollutants were not likely to be discharged (were not 'pollutants of concern") when in fact they would be discharged at levels and frequencies that warrant frequent

compliance monitoring.

Response: The final OCPSF
regulations regulate 63 toxic pollutants
at BAT and 47 toxic pollutants for PSES.
Regulating such a large number of the
toxic priority pollutants is
unprecedented in the effluent guidelines
rulemaking program, reflecting the fact
that many of the organic toxic pollutants
are directly manufactured by OCPSF

facilities as well as used as raw materials or generated as byproducting industry processes.

As discussed elsewhere EPA has determined that the OCPSF industry should not be subcategorized based on product mix for the BAT regulation because the pollutants are treatable to comparable levels for a wide variety of plants within the industry (See Section IV of the Development Document. However, EPA is promulgating BAT limitations for two subcategories which are largely determined by raw waste characteristics (see Section VI.C.1. of this notice). Nevertheless, most OCPSF plants routinely discharge only a limited subset (e.g., 5-15) of the pollutants regulated at BAT. Thus, in the case of a typical plant in the industry, the regulations impose limitations for many pollutants that are not in fact discharged by the plant

In the final regulation, EPA has decided that each discharger in a subcategory will be subject to the effluent limitations for all pollutants regulated for that subcategory Evist EPA recomizes the difficulty in guaranteengths; a plant will never during the period fain discharged pollutant regulated by the applicable subcate the difficulty in actors do cause the major of the applicable subcate the major of the major o

achievable.

Once a pollutant is regulated in the OCPST regulation for discharges in a particular subcategory, it must also be limited in the NPDES permit issued to any discharger in that subcategory. See Sections 301 and 304 of the Act, see also 40 CFR 122.44(a). The question remains, however, as to how much monitoring will be required for the various pollutants regulated by the permit.

politiant EPA has determined that each of the regulated politicants can be

successfully treated by OCPSF dischargers by the use of the best

vailable technology economically

EPA believes that industry's concern that OCPSF dischargers not be required to expend unnecessary resources to monitor for non-existent pollutants is legitimate. While dischargers will normally monitor frequently for at least some toxic pollutants that are expected to be discharged, their monitoring costs would increase if other toxic pollutants were also to be monitored frequently. Whether the cost increase would be significant would depend on several factors, including whether the plant used GC/CD or GC/MS methods (which in turn depends on the number of organic pollutants discharged by the plant) and whether the additional pollutants were members of the same class of compounds as the pollutants that would be monitored in any event. The incremental cost of monitoring using Methods 1624 and 1625 for organics and atomic adsorption for metals could range from \$295 for one organic compound and one metal to \$1,350 for a scan of all regulated organic and metal priority pollutants. Thus it certainly is desirable to minimize unnecessary monitoring. However, as discussed above and in the July 17, 1985 notice, there is legitimate concern that pollutants may be discharged even if some initial information (e.g., a permit application) suggests that they are not currently discharged.

Vice considering the commen submitted on both sides of the issue raised by the July 17, 1985 notice, ELX has decided that the appropriate monitoring achemetor plants in this industry, as in other industries to which EPA, has promulgated effluents limitations quidelines and standards in the past is best determined on a case by case basis. EPA has generally refrained from setting inflexible monitoring requirements in effluent guideline regulations for other industries, and the NPDES permit regulations have similarly been written to allow the permit writer to establish in the permit (subject to all the procedural and substantive safeguards afforded by the NPDES permit procedures of 40 CFR Parts 122 and 124 and by the judicial review provision of section 509(b) of the Act) a set of monitoring requirements that are appropriately tailored to the

plant. See 40 CFR 122.44(i) and 122.48.

The NPDES regulations set for its monitoring and reporting requirements for NPDES dischargers. Section 122.48 requires that each permit specify requirements regarding monitoring type, intervals and frequency sufficient to yield data which are representative of the monitored activity. Section 122.44(i) adds that the monitoring results must be reported with a frequency depending on the nature and effect of the discharge but in no case less than once per year. Sections 122.41, 122.44 and 122.48

contain numerous other requirements concerning monitoring and reporting

However, the NPDES regulations do not establish more specific requirements as to the frequency of monitoring that should be required. The frequency with which compliance monitoring should be performed will normally depend upon a variety of factors. One factor, of course, is the level at which particular pollutant, are likely to be discharged in the event matche plant falls to be at its effluent adequately. This level would depend on production-sprocess; and raw material-related factors, as discussed above and elsewhere in the record-to-this regulation Other factors relevant to setting monitoring requirements include the size of the plant, the size of the plant's flow, the nature and sensitivity of standards applicable to the receiving water, and other site-specific factors. Permit writers have throughout the history of the NPDES permit program made judgments as to the appropriate monitoring frequencies for particular plants, based upon these site-specific considerations. EPA believes that this approach remains the most appropriate for the OCPSF industry as it has been for all other industries.

EPA recognizes that specific guidance on appropriate monitoring requirements for OCPSF plants would be useful, particularly to assure that monitoring not be needlessly required for pollutants that are not discharged at a plant. One noteworthy factor is the monitoring scheme assumed by EPA for purposes of estimating the costs of complying with the OCPSF regulation. EPA has assumed that all plants would monitor their toxic pollutants four times per month. In addition, EPA has assumed that three of the four analyses would include only those toxic pollutants expected to be present at levels of regulatory concern. However, the fourth monthly analysis included all regulated toxic pollutants.

In assessing wastewater data as part of the analysis for developing appropriate monitoring frequencies for toxic pollutants, permit writers should take special care to account for the effects of dilution, which may indicate the absence of pollutants which in fact may be discharged. For example, as mentioned earlier in this preamble, an indication on a Form 2C permit application that a pollutant is absent or is present only at very low concentrations may reflect dilution and may fail to reveal that the pollutant is genuinely associated with and discharged from particular plant processes in significant amounts and thus needs to be monitored frequently.

Thus, permit writers should obtain inplant, pre-dilution data when necessary to properly characterize the wastewater for purposes of establishing monitoring requirements.

To address issues of particular concern, EPA intends to publish guidance on OCPSF monitoring in the near future.

This guidance will address both the issues of compliance monitoring generally and of initially determining which pollutants should be subject only to infrequent monitoring based on a conclusion that they are unlikely to be discharged.

#### 5. Air Emissions of Volatile Pollutants

Comment: In the July 17, 1985 Federal Register notice (50 FR at 29083), EPA discussed its concerns about the "substantial impacts that may result from volatile air emissions at OCPSF biological treatment plants." EPA stated: that available information strongly indicated that biological treatment systems fail to treat substantial portions. of volatile and semi-volatile pollutants but rather transfer them to the air. In light of this information, EPA stated that it was seriously considering promulgating, in addition to the end-ofpipe effluent limitations, an additional set of in-plant, pre-biological limitations for a set of 20 volatile and semi-volatile pollutants. EPA stated that if it promulgated in-plant limitations, they would be applied prior to any biological treatment system, and control authorities would require compliance monitoring prior to the biological system. However, EPA acknowledged that even this approach might not result in a significant reduction of air emissions. This might occur, EPA said, if sources choose to use in-plant control techniques other than steam stripping which meet the BAT limitations but do not result in any significant reduction of air emissions. Therefore, EPA noted that if warranted, EPA may use Clean Air Act ("CAA") authority to address volatile air emissions.

In the subsequent October 11, 1985
Federal Register notice (50 FR at 41529),
EPA extended its discussion of the
OCPSF volatile air emissions issue. EPA
re-emphasized that setting pre-biological
limitations, while serving to discourage
the substitution of air stripping for
treatment, would not absolutely
preclude air stripping. For example,
some facilities use air strippers, or
achieve some degree of air stripping in
equalization basins and other devices,
prior to biological treatment. EPA
reiterated that it was therefore
considering addressing this problem

# NON-DOMESTIC USER SURVEY FORM

I.	GENERAL INFORMATION	
	United Technologies	Inmont Corporation
	Corporate Name	Plant Name
		620 Commerce Lane
	Address - Street and Number	Address - Street and Number
	City.	<u>Kalamazoo, Michigan 49004</u> City Zip Code
	City Zip Code	City Zip Code
		(616) 343-1309 Plant Phone Number
	Larry Gruizenga - Production Manager Name and Title of Person Completing Report	(616) 343-1309 Phone Number
	The information contained in this question of my knowledge and belief, such information	
	Date Signature of Responsit	
	Vivit Salvartal	
	Kurt Schwoebel Print or Type Name of F	Responsible Official
1	Nature of husiness. Manufacture at 11am	
1.	Nature of business: <u>Manufacture and blend</u>	ding of printing inks
	(2893) ( ) Other (	
2.	Write the appropriate Standard Industrial Co	ode (SIC) in the box above.
3.	What types of waste(s) do you discharge to t	the sanitary sewer?
	A. Sanitary B. Wash W	Water C. Rinse Waters
	D. S Cooling Water E. Proces	ss Waters F. Scrubber Waters
	G. () Other	
4.		ases or materials listed in Table I?
_	A. (X) Yes B. (_) No	towator troatmont facility result
5.	Does the operation of your processes or wast in a residual residue or sludge type waste?	sewater treatment ratifity result
	A. ( )Yes B. ( )No	

6.	Sch	dule of operations:
	Α	Number of employees.
		8 hrs/day 5 days/wk 1 shifts/day 12 mos/yr
7.	Α.	If you answered only A to question three(3), sign and return this portion of survey form.
	В.	If you answer to question three (3) is other than A, complete Section II through VIII of this form, sign it, and return to:
II.	PRO	Jean Eldred, Industrial Surveillance Technician Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007
		Provide a complete list of products used or stored on the site which appear on Table I (the consolidated Critical Materials List and Priority Pollutants List). If you use trade name or proprietory chemicals which do not list contents on the package, indicate the trade name(s) and manufacturer's name(s) at this time. You must also write the manufacturer to request an DSHA Form 20 for each such substance and provide POTW with the necessary information when available, i.e., use numbers NOT chemical name, Table I:
	2.	(50) $(73)$ $(89)$ $(124)$ $(139)$ $(149)$ $(154)$ $(156)$ $(157)$ $(159)$ $(51)$ $(127)$ $(128)$ $(150)$ $(151)$ $(153)$ $(155)$ $(161)$ $(162)$ $(163)$ $(164)$ $(166)$ $(166)$
	۷.	reserribe each process (add sheets it heeded). (162) (163) (164) (166) (166
		Materials are mixed together for specific color shades
	3.	Is any of the enclosed information considered to be confidential?  AYes B. ()No C. If yes, explain what and why (all requests for confidentiality will be processed according to 40 CFR Part 2):
	4.	Water Supply: A. Municipal B. Well C. Other, explain
		O. Consumption Used: A. 9,200 gallons per month(ft <sup>3</sup> , gals per time unit)  B. 9,200 gal per month(ft <sup>3</sup> , gals per time unit)  Consumption Total:
	5.	Does your facility have a Spill Prevention Control and Counter Measures Program (SPOC) CFR 112 or a Pollution Incident Prevention Plan (PIPP)  MDNR Rule five (5).
		Vos R (X)No

# III. PROCESS WASTEWATER

	1.	Identify outfalls (circle):
		A. Surface waters. Name of receiving waters:  B. Septic tank-file field. C. Surface of ground. Municipal sanitary sewer. E. Storm sewer. F. Other, describe (include line drawing(s) of process flows and all floor drain discharging to each outfall)
	2.	Volumes of discharge: A. Average Daily Flow: 450 gallon per day B. Maximum Daily Flow: 550 gallon per day C. Flow is: Measured Estimated
	3.	Type of wastewater:
		A. % Process B. % Cooling 90 C. % Sanitary D. % Other
	4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?
		A. (
IV.	DIS	POSAL PRACTICES (add extra pages if necessary)
	1.	How do you dispose of spent chemicals (explain)? Removed by waste hauler
	2.	A. Volume Disposed of: 15d##msannualy How do you dispose of spoilage (explain)?  Remove by waste hauler
	3.	How do you dispose of precipitates and/or sludges (explain)?
	4.	Name of waste hauler: Ashland Chemical Co License No. MD47173655
	5.	Do you have pretreatment for your wastes? A. ()Yes B. ()No
		If box A is checked: Type:  Size:  Frequency of Operation:
		If box B is checked, where and how are the wastes disposed of?
		To sanitary sewer To storm sewer Industrial Waste Hauler Other

6.		you have any air emission control equipment which would discharge to the er system?  A. Yes  B. No
7.	Are	any of the materials listed in Table I discharged with the wastes?
٧.		Yes BNo List by number from Table I:
	1.	List bulk materials stored on site (liquid, solids), (including cleaning agents).  Material: Fuel oil Volume: Location in plant: Located outside of Material: Volume: Location in plant:
	2	
	۷.	Is separate secondary containment provided for bulk materials?
	3.	A.  Yes B. No C. Some  Is separate secondary containment provided for those processes which contain chemicals listed in Table I?
		A. Yes B. No
	4.	Has separate storage been provided for those chemicals which cause hazardous reactions, i.e., acid with cyanide, acids with bases?
		A. Yes B. No
/I.	SAM	PLING AND ANALYSIS
	1.	Are sampling points available for each:
		A. Process Line Yes No  B. Outfall Yes No
	2.	Do you sample your process discharge(s)? Yes No
	3.	Type of sample A. Grab B. Composited  If Box B is checked, is sample composited to A. Flow B. Time
	4.	Is a sampling vault and/or manhole provided?  A. Yes B. No
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.): NONE
	6.	What laboratory analysis (wastewater/solids) can be run on site? NONE

#### VII. MISCELLANEOUS

1.	Describe any saf your site:	ety precau	tions to be observed	by those visiting at
	NO SMO	KING		
	MUST W	ZEAR SAFETY	GLASSES	
		,		
2.	Contact Person:	Name	LARRY GRUIZENGA	
		Title	PRODUCTION MANAGER	
		Phone Numl	ber 616 - 343-1309	

#### NON-DOMESTIC USER SURVEY FORM

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

### TABLE I

The following is a list of the U.S. EPA Priority Pollutants consolidated with the current Critical Materials Register compiled by the Michigan Department of Natural Resources.

# ORGANICS

	<u>OF</u>	RGANICS	
1.	acids	37.	bis(2-chloromethyl) ether
2.	acenaphthene		3-(chloromethyl) pyridine hydrochloride
3.	acetone cyanohydrin	30.,	1-(4-chlorophenyl)-3, 3-dimethyl triazene
4.	2-acetylaminofluorene	40.	
5.	acrolein	41.	4-chloro-o-phenylenediamine
6.	acrylic acid	42.	
7.	acrylonitrile	43.	
8.	allyl chloride	44.	
9.	2-aminoanthraquinone		2,4-diaminoanisole sulfate
10.	aminoazobenzene	46.	
11.			2,4-diaminotoluene
	4-aminobiphenyl	47. 48.	
13.	3-amino-9-ethylcarbazole	49.	this (dibnomannany) phasabata
	l-amino-2-methylanthraquin	50.	
15.	aminotriazole (amitrole)		
	aniline	51. 52.	3,3-dichlorobenzidine 3,3-dichlorobenzidine salts
	aniline hydrochloride		
	o-anisidine	54.	1,2-dichloroethane
19.		54. 54.	
20.	benz(a)anthracene		
21.	benzene	54.	
22.	benzidine	55.	dichloropropane and dichloropropene
	benzidine salts	55.	a. 1,3-dichloropropylene;
23. 24.			(1,3-dichloropropene)
25.	benzo(a)pyrene	55.	
26.	brucine		1,2:3,4-diepoxybutane
20. 27.	carbon tetrachloride	57.	•
27.	chlorinated benzenes	58.	4-dimethylaminoazobenzene
27.		59.	
	b. 1,2,4-trichlorobenzene	60.	2,4-dimethylphenol
27	c. 1,2-dichlorobenzene	01.	4,6-dinitro-o-cresol
	d. 1,3-dichlorobenzene	62.	2,4-dinitrophenol
	e. 1,4-dichlorobenzene		2,4-dinitrotoluene
	chlorinated dibenzofurans chlorinated dioxins		dinitrotoluene
	chlorinated atoxins	64.	
	a. 1,1,1-trichloroethane	65.	di-n-octyl phthalate
		66.	
30.	<ul><li>b. 1,1-dichloroethane</li><li>c. chloroethane</li></ul>	67.	2,3-epoxy-1-propanal
30.		68.	ethylbenzene
30. 31.	d. 1,1,2,2-tetrachloroethane chlorinated naphthalene	<u>69.</u>	ethylene dibromide
31.	•	70.	ethyleneimine
32.	a. 2-chloronaphthalene	71.	ethylene oxide
	chlorinated phenols	72.	ethylene thiourea
32.	a. 2-chlorophenol	73.	bis(2-ethylhexyl)phthalate
32.	b. parachlorometa-cresol	74.	ethylmethanesulfonate
32.	c. 2,4-dichlorophenol	75.	fluoranthene
33.	l-chloro-2,3-epoxypropane	76.	2-(2-formylhydrazino)-4-(5-nitro-2-fury)-
34.	chloroalkyl ethers		thiazole
35.	bis(2-chloroethyl ether	222	LICC CONTINUED ON DAGE O

ORGANICS CONTINUED ON PAGE 2

36. chloroform

•			
77.	Haloethers	116	N mithogomothylyinylamino
77.		116.	N-nitrosomethylvinylamine
77.		117.	
77.		118.	_ * _ * _ * _ * _ * _ * _ * _ * _ * _ *
77. 77.	· • • • • • • • • • • • • • • • • • • •		ammonium salt
		119.	
78.		120.	
78.	a. methylene chloride:	121.	
70	(dichloromethane)	122.	
78.	<ul><li>b. methyl chloride; (chloromethane)</li></ul>	123.	phenol
78.	<ul><li>c. methyl bromide; (bromomethane)</li></ul>	124.	Phthalate esters
78.	<ul><li>d. bromoform; (tribromomethane)</li></ul>	124.	a. butyl benzyl phthalate
78.	e. dichlorobromomethane	124.	
78.		124.	
78.	g. dichlorodifluroomethane	125.	
78.	h. chlorodibromomethane	126.	
79.	hexachlorobenzene (HCB)	127.	
80.	hexachlorobutadiene	128.	polynuclear aromatic hydrocarbons
81.	hexachlorocyclohexane	128.	
82.	hexachlorocyclopentadiene		a. 3,4-benzofluoranthene
83.	hexachloroethane	128	b. benxo(k) fluoranthane;
84.	hydrazobenzene	3.00	(11,12-benzofluoranthene)
85.	hydroquinone	128.	c. chrysene
86.	N-(2-hydroxyethyl)ethyleneimine	128.	d. acenaphthylene
87.	isophorone	128.	e. anthracene
88.	lactonitrite	128.	f. benzo(ghi)perylene;
89.	malachite green		(1,12-benzoperylene)
90.	methylenebis(2-chloroaniline)	128.	g. fluorene
91.	4,4-methylenebis(2-methylaniline)	128.	h. phenathrene
92.	4,4-methylenebis(N,N-dimethylaniline)	128.	<pre>i. indeno(1,2,3-cd)pyrene;</pre>
93.			(2,3-0-phenylenepyrene)
55.	1,2(methylenedioxy)-4-propenyl benzene	128.	j. pyrene
0.4		128.	
94.	methyl hydrazine	129.	1,3-propane sultone
95.	l-methylnaphthalene	130.	
96.	2-methyl-l-nitroanthraquinone	.131.	
97.	mustard gas	132.	
98.	1,5-naphthalenediamine	133.	semicarbazide
99.	1-naphthylamine	134.	styrene
100.	2-naphthylamine	135.	
101.	5-nitroacenaphthene	136.	
102.	5-nitro-o-anisidine	137.	4,4-thiodianiline
103.	nitrobenzene	138.	thiourea
104.	4-nitrobiphenyl	(39)	toluene
105.	nitrogen mustard	140.	o-toluidine
106.	2-nitrophenol	141.	
107.	4-nitrophenol	142.	triaryl phosphate esters
108.	Nitrosamines	143.	1,1,2-trichloroethane
108.	a. N-nitrosodiphenylamine	144.	trichloroethylene
108.	<ul><li>b. N-nitrosodi-n-propylamine</li></ul>	145.	trichlorophenols
109.	N-nitroso-n-butyl-N-(4-hydroxybutyl)	145.	2,4,5-trimethylaniline
	amine	147.	
110.	N-nitrosodiethylamine	147.	trimethylphosphate
111.	N-nitrosodimethylamine		vinylchloride
112.	p-nitrosodiphenylamine	149.	xylene
113.	N-nitroso-N-ethylurea	00004	ITCC CONTINUED ON DACE 2
114.	N-nitroso-N-methylurea	UKGAN	IICS CONTINUED ON PAGE 3
115.	N-nitroso-N-methylurethane		
	- •		

Α. ]	INORGANICS	PEST	ICIDES (Continued)
150.	antimony	194.	chlorpyrifos
151.	arsenic		clonitralid
152.	beryllium		coumaphos
	cadmium		crotoxyphos
	chromium	198.	
	cobalt	199.	
156.	copper	200.	
	cyanides	201.	
	hypochlorite		diazinon
	lead		dibromochloropropane (DBCP)
	lithium	204.	dichlone
	mercury		dichlorvos
	nickel		dichrotophos
163.	selenium	207.	dieldrin
	silver		dimethoate
	thallium		dinocap
166.	zinc		dinoseb
			dioxathion
<u>B. 1</u>	NORGANICS		disulfoton
167	• 1.		endosulfan
	acids		endrin
	chloramines	215.	
	chlorine	216.	
	hydrazine		fensulfothion
171.	hydrogen sulfide		fenthion
C. I	NORGANICS	219.	fluchloralin
<u>U. 1</u>	NORGANICS	220.	•
172.	asbestos (fibrous)	222.	
1/2.	aspestos (Tibioas)	222.	
PFSTI	CIDES	222.	
1 2011		222.	
173.	aldicarb	223.	
174.		224.	malathion
	4-aminopyridine	225.	
176.	anilazine	225.	a. 4,4'-DDE;(p,p'-DDE)
177.	antimycin A	225.	b. 4,4'-DDD;(p,p'-TDE)
178.	azinphos-ethyl	226.	metabolites of endosulfan
179.	azinphos-methyl	226.	<ul> <li>a. endosulfan sulfate</li> </ul>
180.	barban	227.	metabolities of endrin
181.	bendiocarb	227.	a. endrin aldehyde
182.	benomyl	228.	metabolites of heptachlor
183.	bromoxynil	228.	a. heptachlor epoxide
184.	2(p-tert-butylphenoxy)-isoprophyl-	229.	methomyl
305	2-chloroethyl sulfite	230.	methoxychlor
185.	captafol	231.	methyl mercaptan
186.	captan	232.	methyl parathion
187.	carbaryl	233.	mevinphos
188.	carbofuran	234.	mexacarbate
189. 190.	carbophenothion chlordane	235.	mirex
190.	chlordecone	236.	monocrotophos
191.	chlorfenvinphos	237.	naled
192.	chlorobenzilate	238.	nicotine
173.	CITTOT ODENZ FIR CE	239.	nitrofen

240. oxydemeton-methyl

# PESTICIDES (Continued)

- 241. paraquat
- 242. parathion
- 243. phorate 244. phosazetim
- 245. phosmet

- 246. phosphamidon247. rotenone248. silvex, propylene glycolbutyl ether ester
- 249. sodium fluoroacetate
- 250. strychnine
- 251. sulfallate
- 252. sulfotepp
- 253. TDE
- 254. TEPP
- 255. terbufos
- 256 tetrachlorvinphos
- 257. thiram
- 258. toxaphene
- 259. trichlorfon
- 260. trichlorophenoxyacetic acid (2,4,5-T)
- 261. trifluralin
- 262. ziram

# ATTACHMENT A

# STANDARD INDUSTRIAL CLASSIFICATION CODES

Note: This is an edited list.

Code Title	Code Title
AGRICULTURE	MANUFACTURING (Continued)
0100 AGRICULTURAL PRODUCTION-CROPS 0200 AGRICULTURAL PRODUCTION- LIVESTOCK 0211 Beef Cattle Feedlots 0241 Dairy Farms 0700 AGRICULTURAL SERVICES MINING	2080 Beverages 2082 Malt Beverages 2084 Wines, brandy, and brandy spirits 2085 Distilled liquor, except brandy 2086 Bottled and canned soft drinks 2087 Flavoring extracts and sirups, nec. 2090 Misc. Foods and Kindred Products 2091 Canned and cured seafoods 2092 Fresh or frozen packaged fish
1000 METAL MINING	2200 TEXTILE MILL PRODUCTS
1011 Iron Ores 1021 Copper Ores 1081 Metal Mining Services	2300 APPAREL AND OTHER TEXTILE PRODUCTS
1300 OIL AND GAS EXTRACTION 1380 Oil and Gas Field Services	2400 LUMBER & WOOD PRODUCTS 2420 Sawmills and Planing Mills 2430 Millwork, Plywood & Structure Members
1400 NONMETALIC MINERALS 1422 Crushed and Broken Limestone 1440 Sand and Gravel 1450 Clay and Related Minerals 1470 Chemical and Fertilizer Minerals 1492 Gypsum	2440 Wood Containers 2448 Wood pallets and skids 2450 Wood Buildings and Mobile Homes 2491 Wood preserving 2492 Particleboard
CONSTRUCTION	2500 FURNITURE AND FIXTURES
1500 GENERAL BUILDING CONTRACTORS	2600 PAPER AND ALLIED PRODUCTS 2611 Pulp mills
1600 HEAVY CONSTRUCTION CONTRACTORS	2621 Paper mills except building paper 2631 Paperboard mills
MANUFACTURING	2640 Misc. Converted Paper Products 2650 Paperboard Containers and Boxes 2661 Building paper and board mills
2000 FOOD AND KINDRED PRODUCTS 2010 Meat Products 2011 Meat Packing Plants & Slaughter Houses 2020 Dairy Products 2030 Preserved Fruits & Vegetables 2033 Canned Fruits & Vegetables 2035 Pickles, Sauces & Salad Dressings 2037 Frozen Fruits & Vegetables 2040 Grain Mill Products 2043 Cereal Breakfast Foods 2047 Dog, Cat & Other Pet Food 2050 Bakery Products 2060 Sugar and Confectionary Products 2063 Beet Sugar 2070 Fats & Oils 2076 Vegetable Oil Mills 2077 Animal & Marine Fats & Oils	2700 PRINTING AND PUBLISHING 2710 Newspapers 2750 Commercial Printing 2790 Printing Trade Services  2800 CHEMICALS AND ALLIED PRODUCTS 2810 Industrial Inorganic Chemicals 2820 Plastics Materials & Synthetics 2830 Drugs 2840 Soap, Cleaners, and Toilet Goods 2850 Paints and Allied Products 2860 Industrial Organic Chemicals 2870 Agricultural Chemicals 2890 Miscellaneous Chemical Products 2891 Adhesives and sealants

Code	Title	Code	<u> </u>	Title
MANU	FACTURING (Continued)	MANU	FACTURING (	Continued)
2893	Explosives Printing Inks	3398	Metal heat	treating
	Salt (by evaporation)			METAL PRODUCTS & shipping containers
	PETROLEUM AND COAL PRODUCTS Petroleum refining	3420	Cutlery,ha	nd tools, & hardware heating, except electric
2950	Paving and roofing materials	3440	Fabricated	structural metal products s, sash & trim
	RUBBER AND MISC. PLASTIC PRODUCTS Tires and inner tubes	3443		plate work (boiler shops)
	Fabricated rubber products			ine products, bolts, etc.
	Miscellaneous plastic products	3460	Metal forg	ings and stampings
3100	LEATHER AND LEATHER PRODUCTS		Nonferrous	teel forgings
3111	Leather tanning and finishing		Automotive	
		3470	Metal serv	ices
	STONE, CLAY, AND GLASS PRODUCTS			d polishing
	Glass and Glassware, Pressed or Blown Cement			ing and allied services nd Accessories
	Structural Clay Products			icated Metal Products
3260	Pottery and Related Products	0,00		
	Concrete, Gypsum and Plaster Products			EXCEPT ELECTRICAL
	Concrete block and brick		Engines an	
	Ready-mixed concrete Lime			arden Machinery on & Related Machinery
	Gypsum products			g machinery
3290	Misc. Nonmetallic Mineral Products	3550	Special In	dustry Machinery
	Abrasive products			dustrial Machinery
	Asbestos products Minerals,ground or treated			omputing Machines ion & Service Machinery
	Nonclay refractories			inery, except electrical
	PRIMARY METAL INDUSTRIES			ND ELECTRONIC EQUIPMENT
	Blast Furnaces & Basic Steel Products			istributing Equipment
3312	Blast Furnaces & Steel Mills	3620	Electrical	Industrial Apparatus
	Electrometallurgical products		Household	
	Steel wire and related products Cold finishing of steel shapes			ighting and wiring equipment Receiving Equipment
	Steel pipe and tubes			ion Equipment
	Iron and Steel Foundries			Components & Accessories
	Gray iron foundries	3690	Misc. Elec	trical Equipment & Supplies
	Malleable iron foundries	2700	TDANCDODTA:	TION EQUIPMENT
	Primary Nonferrous Metals Primary copper			icles & Equipment
	Primary lead			icles & Car Bodies
3333	Primary zinc	3714	Motor Vech	icles & Accessories
	Primary aluminum		Truck trai	
	Secondary Nonferrous Metals		Aircraft an	nd parts rd building and repairing
	Die Casting Aluminum foundries		Railroad Ed	
	Brass, bronze & copper foundries			s,Bicycles & Parts
	Misc. Primary Metal Products			sles,Space Vechicles Parts

MANUFACTURING (Continued)	SERVICES (Continued)
3790 Miscellaneous Transportation Equipment 3792 Travel trailers & campers 3795 Tanks and tank components	7030 Camps and Trailering Parks 7032 Sporting and recreational camps 7210 Laundry, Cleaning & Garment Services 7215 Coin-operated laundries
3800 INSTRUMENTS & RELATED PRODUCTS 3810 Engineering & Scientific Instruments 3820 Measuring & Controlling Devices 3830 Optical Instruments and Lenses 3840 Medical Instruments and Supplies 3860 Photographic Equipment & Supplies	7391 Laboratories-testing and research 7399 Water softener service
3900 MISCELLANEOUS MANUFACTURING INDUSTRIES 3910 Jewelry, Silverware & Plated Ware 3930 Musical Instruments	7500 AUTO REPAIR SERVICES & GARAGES 7530 Automotive Repair Shops 7542 Car Washes
3940 Toys & Sporting Goods 3950 Pens, Pencils, Office & Art Supplies 3990 Miscellaneous Manufactures	7900 AMUSEMENT & RECREATION SERVICES 7933 Bowling alleys 7940 Commercial sports 7941 Sports clubs and promoters
TRANSPORTATION 4010 RAILROADS	7948 Racing including track operation 7992 Public golf courses 7996 Amusement parks
4200 TRUCKING AND WAREHOUSING 4210 Trucking Local & Long Distance 4214 Hauling Liquid Wastes 4221 Farm Product Warehousing & Storage 4222 Refrigerated Warehousing 4230 Trucking Terminal Facilities	7997 Membership sports & recreation clubs 8000 HEALTH SERVICES 8050 Nursing and personal care facilities 8060 Hospitals 8070 Medical and Dental Laboratories 8080 Outpatient Care Facilities
4400 WATER TRANSPORTATION 4430 Great Lakes Transportation 4440 Transportation on Rivers and Canals 4452 Ferries 4454 Towing and tugboat services 4460 Water Transportation Services 4463 Marine Cargo Handling	
SERVICES	
4900 ELECTRIC,GAS & SANITARY SERVICES 4911 Electric Services 4925 Gas production and/or distribution 4953 Refuse systems	
5810 EATING & DRINKING PLACES	

6512 OFFICE BUILDINGS

7000 HOTELS & OTHER LODGING PLACES 7011 Hotels, motels, & tourist courts

#### POLLUTANTS KNOWN TO BE PRESENT OR

#### SUSPECTED TO BE PRESENT IN PASTE INKS

- 51. 3,3-Dichlorobenzidine Diarylide Yellow pigments are derived from 3,3-Dichlorobenzidine. However, suspected to be absent.
- 127. Polychlorinated Biphenyls 50 PPM maximum in Diarylide Yellow, Phthalocyanine Green pigments.
- 128. Polynuclear Aromatic Hydrocarbons 6.42 PPM of 3,4 Benzpyrene is the highest expected level in Furnace Black pigments.

#### A. INORGANICS

- 150. Antimony
- 151. Arsenic
- 153. Cadmium
- 154. Chromium
- 155. Cobalt
- 156. Copper
- 159. Lead
- 161. Mercury
- 162. Nickel
- 163. Selenium
- 164. Silver
- 166. Zinc

Trace quantities in most pigments.

- 154. Chromium
- % Cr & Pb in all Chrome Yellow and

Molybdated Orange pigments.

- 159. Lead
- 155. Cobalt % Co in oil ink driers.
- 156. Copper % Cu in Phthalocyanine Blue and Green pigments.
- 157. Cyanide Present in Iron Blue pigments as insoluble complex.

#### B. INORGANICS

169. Chlorine - % contained in pigments such as:

Watchung Red
Barium 2B Red
Calcium 2B Red
Red Lake C
AAOT Yellow
HR Yellow
Carbazole Violet
Cyan Green

# **BASF Corporation**

Inmont Division

The transfer of the company of the contract of





March 16, 1987

Packaging Inks

Ms. Jean Eldred
INDUSTRIAL SERVICES SUPERVISOR
City of Kalamazoo
1415 North Harrison
Kalamazoo, MI 49007

Dear Ms. Eldred:

Confirming our phone conversation, the following is the information which you have requested:

127 - Polychlorinated Biphenyls in our paste and fluid ink - 50 ppm maximum in Dairylide Yellow, Cyan Blue, and Cyan Green pigments. The maximum lbs. in our facility in a year's time would be 2 million lbs. of this amount, a maximum of 10% of this total would be Dairylide Yellow, Cyan Blue, and Cyan Green.

As we discussed, we would not anticipate a PCB spill in the sanitary sewer. Attached, please find a copy of our Spill Prevention procedure that we use in our Kalamazoo facility.

Jean, if you should have any further questions, please feel free to give me a call, or our Jim Lem, Production Manager.

Sincerely Yours,

KS/lw

Enclosures

cc: Jim Lem
Bob Breen

3-19

I apope with Jum Lem re: attached letter. Kurt forgot to include that they have no process waste discharge to sanitary sewer (as we had discussed learlier was telephone) Jim will have kurt get a brach to me

Jean Eldred



## SEG LABORATORIES, INC.

August 25, 1988

City of Kalamazoo 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Dr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on July 20, 1988.

PO#: 43111

SEG Number:	77253	77254	77255	77256
Tag:	James River #JRC 20088 8:10 A.M. 7/18/88	*Inmont *INM 20088 8:35 A.M. 7/18/88	Allied Paper #APC 20088 9:15 A.M. 7/18/88	Upjohn- Bishop #UJB 20088 10:10 A.M. 7/18/88
PCB - 1016, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1221, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1232, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1242, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1248, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1254, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1260, ug/L	<0.1	<0.1	<0.1	<0.1



### SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

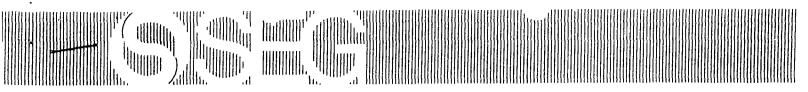
Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239
Tag:	James River Clarifier 7:50 A.M.	Georgia Pacific Clarifier GEO 11688 10:30 A.M. 04/25/88	Inmont INM11788
PCB-1016, ug/L	<0.1	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1	<0.1
SEG Number:	75240	75241	
Tag:	Allied Paper Clarifier APC 11768 04/26/88	Upjohn Bishop Rd. UJB11788 04/26/88	

PCB-1016, ug/L <0.1 <0.1 PCB-1221, ug/L <0.1 <0.1 PCB-1232, ug/L <0.1 <0.1 PCB-1242, ug/L <0.1 <0.1 <0.1 PCB-1248, ug/L <0.1 PCB-1254, ug/L <0.1 <0.1 PCB-1260, ug/L <0.1 <0.1

Approved by Lori A. Vachon



# SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239
Tag:	James River Clarifier 7:50 A.M.	Georgia Pacific Clarifier GEO 11688 10:30 A.M.	Inmont INM11788
	04/25/88	04/25/88	04/26/88
PCB-1016, ug/L	<0.1	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1	<0.1
SEG Number:	75240	75241	
fag:	Allied Paper Clarifier APC 11788	Upjohn Bishop Rd. UJB11788	
	04/26/88	04/26/88	
CB-1016, ug/L	<0.1	<0.1	
PCB-1221, ug/L	<0.1	<0.1	
PCB-1232, ug/L	<0.1	<0.1	
CB-1242, ug/L	<0.1	<0.1	
CB-1248, ug/L	<0.1	<0.1	
CB-1254, ug/L	<0.1	<0.1	
CB-1260, ug/L	<0.1	<0.1	

approved by Kori Q. Vacho



DATE Sept. 22, 1987

# Brighton Analytical Inc.

1576 Alloy Parkway

# Phone (313) 887-6364 DATA SUMMARY SHEET

Highland, Michigan 48031

Sample Name/Date

		-				 
<u>Parameter</u>	<u>Units</u>	KWRP Blank 9/9	KWRP Outfall 9/9	BASF- Inmont 9/9	Bronson Inciner 9/9	
Aroclor 1221	ug/l	<0.03	< 0.01	< 0.09	< 0.01	
Aroclor 1242	ug/l	<0.01	< 0.01	< 0.05	< 0.01	
Aroclor 1254	ug/l	< 0.01	< 0.03	0.05	< 0.01	
Aroclor 1260	ug/l	< 0.01	0.06	<0.02	<0.02	
Total PCB's	ug/l	<0.06	0.06	0.05	< 0.05	



DATE January 8, 1988

# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031

DATA SUMMARY SHEET

page 1 of 2

<b>.</b>							
פידעוו	Blank 33687	Paner	River	Pacific	34387	Inmont	Upjohr
011210	12/2/0	12/2/87	12/2/07	12/2/87	12/9/07	12/9/87	12/9/07
ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	۷۰.01
ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01
ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	۷0.01
ug/l	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
ug/l	< 0.05	<0.05	< 0.04	<0.05	< 0.05	<0.05	< 0.05
	ug/l ug/l ug/l	UNITS 33687 12/2/87 ug/l <0.01 ug/l <0.01 ug/l <0.02	UNITS   33687   Paper   12/2/87   12	UNITS   33687   Paper   River   12/2/87   12/2/87   12/2/87   2/2/87   12/2/	UNITS   33687   Paper   River   Pacific   12/2/87   12/2	UNITS   33687   Paper   River   Pacific   34387   12/2/87   12/2/87   12/2/87   12/2/87   12/9/87   12/2/8	UNITS   33687   Paper   River   Pacific   34387   12/2/87   12/2/87   12/2/87   12/9/8

# NON-DOMESTIC USER SURVEY FORM

I.	GENERAL INFORMATION
	GEORGIA PACIFIC CORP. KALAMAZOO PAPER DIV. Corporate Name Plant Name
•	2425 KING HUY.  Address - Street and Number  Address - Street and Number
	KALMMAZOO MI. 49003 City Zip Code City Zip Code
	616-382-2890 Plant Phone Number
	PAUL H. STOFER EFFLUENT ENGINEER 616 382 - 2890  Name and Title of Person Completing Report Phone Number
	The information contained in this questionnaire is familiar to me and to the best of my knowledge and belief, such information is true, complete and accurate.
	Date Signature of Responsible Official Title
	THOMAS F. SULLIUAN Print or Type Name of Responsible Official
1.	Nature of business: PRINTING PAPER MANUFACTURING AND SECONDARY FIBER DEINKING
	(2) (6) (2) (1) Other (1) (1)
2.	Write the appropriate Standard Industrial Code (SIC) in the box above.
3.	What types of waste(s) do you discharge to the sanitary sewer?
	A. Sanitary  B. Wash Water  C. Rinse Waters  D. Cooling Water  E. Process Waters  F. Scrubber Waters
	G. Other
4.	Do you use, store or discharge any acids, bases or materials listed in Table I?  A. (1) Yes B. (1) No
5.	Does the operation of your processes or wastewater treatment facility result in a residual residue or sludge type waste?  A. (V)Yes B. ( )No

6.	Sch	edule of	operatio	ins:							•
	Α		385	Nur	mber of	f employe	ees.				
	В	24	_hrs/day		7	_days/wk		3	_shifts/da	12	mos/yr
7.	Α.		answered ey form.	only A to	o quest	tion thre	ee(3)	, sign	and retur	n this po	rtion
	В.		answer to VIII of						A, comple:	te Sectio	n II
II.	PRO	Jean Eldred, Industrial Surveillance Technician Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007									
		on Tabl tants L list co name(s) OSHA Fo informa	e I (the ist). If ontents on at this orm 20 for	consolida you use the pack time. Yo each suc availab	ated Cr trade kage, i ou must ch subs	ritical M name or indicate t also wr stance ar	Materi propr the t ite t	ials L rietor trade the ma ovide	d on the sist and Private of the sist of the sister of the	iority Po s which do d manufac to reques the neces	llu- o not turer's st an sary
			(122)	(151)	. (15	6 (1	<u>(3)</u>	16	7) (169)		
	2.	Describ	e each pr	OCESS (ac		ets if ne	eded)	):			
	3.	A	)Yes B		Mo	C. If y	es, e	explai	be confider n what and o 40 CFR Pa	why (all	requests
	4.			_	=	B. (7	√We1	1 C.	( Other	, explai	n
		D. Con	<u>SPM2</u> sumption sumption	Used: A. B.	9A 2	600 ft MED. 162 m.			ft <sup>3</sup> , <del>gals p</del> ft <sup>3</sup> , gals p		
	5.	Program		FR 112 or	Spill	Prevent	ion C		l and Count evention Pl		
		A. (	Yes	в	No						

# III. PROCESS WASTEWATER

	A. Surface waters. Name of receiving waters:								
•	B. Septic tank-file field. C. Surface of ground. D. Municipal sanitary sewer. E. Storm sewer. F. Other, describe (include line drawing(s) of process flows and all floor drain discharging to each outfall)								
2.	Volumes of discharge: A. Average Daily Flow: 7.5 mjujered allon per day B. Maximum Daily Flow: 8.5 million per day C. Flow is: Measured Estimated								
3.	Type of wastewater:								
	A. % Process 99 B. % Cooling C. % Sanitary / D. % Other								
4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?  A. (VYes B. (NO If yes, estimate area drained) 5,000 sq. ft.								
DIS	ISPOSAL PRACTICES (add extra pages if necessary)								
1.	How do you dispose of spent chemicals (explain)? OIL - PURCHASED BY A WASTE OIL DEALER CHEMICAL - DISPOSED OF BY A-I DISPOSAL								
2.	A. Volume Disposed of:  How do you dispose of spoilage (explain)? DISPOSED OF BY A-1 DISPOSAL								
3.	How do you dispose of precipitates and/or sludges (explain)? THEY ARE  DISPOSED OF IN A LANAFILL ON OUR OWN PROPERTY.  A. Volume Disposed of: 30 TONS/DAY								
1.	Name of waste hauler: A-1 DISPOSAL  A. Volume Disposed of: 30 TO NS/DAY  EPA I.O.  License No. MID 059695452								
	Do you have pretreatment for your wastes? A. Yes B. No								
	If box A is checked: Type: PRIMARY CLARIFIER  Size: 203,376 FT <sup>3</sup> Frequency of Operation: CONTINUOUS								
	If box B is checked, where and how are the wastes disposed of?								
	To sanitary sewer To storm sewer  Industrial Waste Hauler Other  If other, explain								
	2. 3. 1. 2.								

#### VII. MISCELLANEOUS

1.	Describe any safety precautions to be observed by those visiting at your site: ANY VISITATION MUST BE APPROVED BY THE
	MILL MANAGER AND SAFETY PRECAUTIONS WILL BE DISCUSSED
	ATTHAT TIME.

2. Contact Person: Name THOMAS F. SULLIVAN

Title RESIDENT MILL MANAGER

Phone Number 382 - 2890 EXT. 201

# NON-DOMESTIC USER SURVEY FORM

PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.

PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.

- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.

SPENT CHEMICALS: Chemicals that have exhausted their usefulness.

STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

#### TABLE I

The following is a list of the U.S. EPA Priority Pollutants consolidated with the current Critical Materials Register compiled by the Michigan Department of Natural Resources.

#### ORGANICS

		ORGA
2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23.	acrylonitrile allyl chloride 2-aminoanthraquinone aminoazobenzene o-aminoazotoluene 4-aminobiphenyl 3-amino-9-ethylcarbazole l-amino-2-methylanthraquin aminotriazole (amitrole) aniline aniline hydrochloride o-anisidine o-anisidine hydrochloride benz(a)anthracene benzene benzidine benzidine	ORGA
22. 23. 24. 25. 26. 27. 27. 27. 27. 28. 29. 30. 30. 30. 31.	benzidine benzidine salts benzo(a)pyrene brucine carbon tetrachloride chlorinated benzenes a. chlorobenzene b. 1,2,4-trichlorobenzene c. 1,2-dichlorobenzene d. 1,3-dichlorobenzene e. 1,4-dichlorobenzene chlorinated dibenzofurans chlorinated dioxins chlorinated ethanes a. 1,1,1-trichloroethane b. 1,1-dichloroethane c. chloroethane d. 1,1,2,2-tetrachloroethane chlorinated naphthalene a. 2-chloronaphthalene	3
32. 32. 32. 33. 34.	chlorinated phenols a. 2-chlorophenol b. parachlorometa-cresol c. 2,4-dichlorophenol l-chloro-2,3-epoxypropane chloroalkyl ethers	

bis(2-chloroethyl ether

chloroform

35.

36.

```
37. bis(2-chloromethyl) ether
38., 3-(chloromethyl) pyridine hydrochloride
39. 1-(4-chlorophenyl)-3, 3-dimethyl triazene
    4-chloro-m-phenylenediamine
41.
     4-chloro-o-phenylenediamine
42.
     chloroprene
43.
    5-chloro-o-toluidine
44.
     p-cresidine
45. 2,4-diaminoanisole sulfate
46. 4,4-diaminodiphenyl ether
     2,4-diaminotoluene
47.
48.
     dibenz (a,h)anthracene
49.
     tris(dibromopropyl)phosphate
50.
     di-n-butyl phthalate
51.
     3,3-dichlorobenzidine
52.
     3,3-dichlorobenzidine salts
53.
    1,2-dichloroethane
54.
     dichloroethylenes
54.
     a. 1,1-dichloroethylene
54.
     b. 1,2-trans-dichloroethylene
55.
     dichloropropane and dichloropropene
        1,3-dichloropropylene;
         (1,3-dichloropropene)
         1,2-dichloropropane
55.
    1,2:3,4-diepoxybutane
56.
    diethyl sulfate
57.
58.
     4-dimethylaminoazobenzene
59.
     dimethylhydrazines
60.
     2,4-dimethylphenol
61.
     4,6-dinitro-o-cresol
     2,4-dinitrophenol
62.
63.
     2,4-dinitrotoluene
64.
     dinitrotoluene
64.
     a. 2,6-dinitrotoluene
65.
     di-n-octyl phthalate
     1,4-dioxane
66.
67.
     2,3-epoxy-1-propanal
68.
     ethylbenzene
69.
     ethylene dibromide
70.
     ethyleneimine
7].
     ethylene oxide
72.
     ethylene thiourea
73.
     bis(2-ethylhexyl)phthalate
74.
     ethylmethanesul fonate
     fluoranthene
75.
     2-(2-formylhydrazino)-4-(5-nitro-2-fury)-
76.
     thiazole
```

ORGANICS CONTINUED ON PAGE 2

77.	Haloethers	116.	N-nitrosomethylvinylamine
77.	<ul> <li>a. 4-chlorophenyl phenyl ether</li> </ul>	117.	N-nitrosomorpholine
77.		118.	N-nitroso-N-phenylhydroxyl-amine,
77.		110.	ammonium salt
77.	d. bis(2-chloroethoxy)methane	770	
78.		119.	N-nitrososarcosine
		120.	pentachloronitrobenzene
78.	a. methylene chloride:	121.	pentachlorophenol
	(dichloromethane)	122.	peroxyacetic acid
78.	<ul><li>b. methyl chloride; (chloromethane)</li></ul>	123.	phenol
78.	<ul><li>c. methyl bromide; (bromomethane)</li></ul>	124.	Phthalate esters
78.	<ul><li>d. bromoform; (tribromomethane)</li></ul>	124.	a. butyl benzyl phthalate
78.	e. dichlorobromomethane	124.	b. diethyl phthalate
78.	f. trichlorofluoromethane	124.	c. dimethyl phthalate
78.	g. dichlorodifluroomethane	125.	piperonyl sulfoxide
78.	h. chlorodibromomethane		
79.	hexachlorobenzene (HCB)	126.	polybrominated biphenyls (PBB)
80.	hexachlorobutadiene	127.	polychlorinated biphenyls (PCB)
81.		128.	polynuclear aromatic hydrocarbons
	hexachlorocyclohexane	128.	a. 3,4-benzofluoranthene
82.	hexachlorocyclopentadiene	128	<ul><li>b. benxo(k) fluoranthane;</li></ul>
83.	hexachloroethane		(11,12-benzofluoranthene)
84.	hydrazobenzene	128.	c. chrysene
85.	hydroquinone	128.	
86.	N-(2-hydroxyethyl)ethyleneimine	128.	·
87.	isophorone		
88.	lactonitrite	128.	
89.	malachite green	7.00	(1,12-benzoperylene)
90.	methylenebis(2-chloroaniline)	128.	g. fluorene
91.	4,4-methylenebis(2-methylaniline)	128.	h. phenathrene
92.	4,4-methylenebis(N,N-dimethylaniline)	128.	<pre>i. indeno(1,2,3-cd)pyrene;</pre>
93.			(2,3-0-phenylenepyrene)
93.	1,2(methylenedioxy)-4-propenyl	128.	j. pyrene
0.4	benzene	128.	
94.	methyl hydrazine	129.	
95.	l-methylnaphthalene	130.	
96.	2-methyl-l-nitroanthraquinone	131.	
97.	mustard gas	132.	propyleneimine
98.	1,5-naphthalenediamine	133.	semicarbazide
99.	l-naphthylamine	134.	
100.	2-naphthylamine		styrene
101.	5-nitroacenaphthene		tetrachloroethylene(perchloroethylene)
102.	5-nitro-o-anisidine	136.	
103.	nitrobenzene	1137.	•
104.	4-nitrobiphenyl	138.	thiourea
105.	nitrogen mustard	139.	
105.	2-nitrophenol	140.	
100.	4-nitrophenol	141.	o-toluidine hydrochloride
		142.	triaryl phosphate esters
108.	Nitrosamines	143.	1,1,2-trichloroethane
108.	a. N-nitrosodiphenylamine	144.	trichloroethylene
108.	<ul><li>b. N-nitrosodi-n-propylamine</li></ul>	145.	trichlorophenols
109.	N-nitroso-n-butyl-N-(4-hydroxybutyl)	146.	2,4,5-trimethylaniline
_	amine	147.	trimethylphosphate
110.	N-nitrosodiethylamine	148.	
111.	N-nitrosodimethylamine		vinylchloride
112.	p-nitrosodiphenylamine	149.	xylene
113.	N-nitroso-N-ethylurea	00013	ITOC CONTINUED ON DACE 2
114.	N-nitroso-N-methylurea	URGAN	NICS CONTINUED ON PAGE 3
115.	N-nitroso-N-methylurethane		
115.	H HI DI OSO-H-IIIC DIG FUI COIMIC		

#### A. INORGANICS PESTICIDES (Continued) 150. antimony 194. chlorpyrifos 151. arsenic 195. clonitralid 152. beryllium 196. coumaphos 197. 153. cadmium crotoxyphos 154. chromium 198. cycloheximide 199. DDT 155. cobalt 156. copper 200. demeton 201. 157. cyanides diallate 158. hypochlorite 202. diazinon 159. lead 203. dibromochloropropane (DBCP) 160. lithium 204. dichlone 205. dichlorvos 161. mercury 162. nickel 206. dichrotophos 163. selenium 207. dieldrin 164. silver 208. dimethoate 165. thallium 209. dinocap 166. zinc 210. dinoseb 211. dioxathion B. INORGANICS 212. disulfoton 213. endosulfan 167. acids 214. endrin 168. chloramines 215. EPN 169. chlorine 216. ethion 170. hydrazine 217. fensulfothion. 171. hydrogen sulfide 218. fenthion 219. fluchloralin C. INORGANICS 220. heptachlor 221. heptachlor epoxide 172. asbestos (fibrous) 222. Isomers of hexachlorocyclohexane 222. a. a-BHC-Alpha 222. PESTICIDES b. b-BHC-Beta 222. c. q-BHC-Delta 173. aldicarb 223. leptophos 174. aldrin 224. malathion 175. 4-aminopyridine 225. metabolites of DDT 176. anilazine 225. a. 4,4'-DDE;(p,p'-DDE) b. 4,4'-DDD;(p,p'-TDE) 177. antimycin A 225. 178. azinphos-ethyl 226. metabolites of endosulfan 179. azinphos-methyl 226. endosulfan sulfate a. 180. barban metabolities of endrin 227. 181. bendiocarb 227. endrin aldehyde 182. benomyl 228. metabolites of heptachlor 183. bromoxynil 228. a. heptachlor epoxide 2(p-tert-butylphenoxy)-isoprophyl-184. 229. methomy1 2-chloroethyl sulfite 230. methoxychlor 185. captafol 231. methyl mercaptan 186. captan 232. methyl parathion 187. carbaryl 233. mevinphos 188. carbofuran 234. mexacarbate 189. carbophenothion 235. mirex 190. chlordane 236. monocrotophos 191. chlordecone 237. naled 192. chlorfenvinphos 238. nicotine chlorobenzilate 193. 239. nitrofen

240.

oxydemeton-methyl

#### PESTICIDES (Continued)

- 241. paraquat 242. parathion 243. phorate 244. phosazetim 245. phosmet , phosphamidon 246. 247. rotenone silvex, propylene glycolbutyl 248. ether ester sodium fluoroacetate 249. 250. strychnine 251. sulfallate 252. sulfotepp 253. TDE 254. TEPP
- 256. tetrachlorvinphos 257. thiram

255. terbufos

- 258. toxaphene
- 259. trichlorfon
- 260. trichlorophenoxyacetic acid (2,4,5-T)
- 261. trifluralin
- 262. ziram

## ATTACHMENT A

#### STANDARD INDUSTRIAL CLASSIFICATION CODES

Note: This is an edited list.

Code Title	<u>Code</u> Title
AGRICULTURE	MANUFACTURING (Continued)
0100 AGRICULTURAL PRODUCTION-CROPS 0200 AGRICULTURAL PRODUCTION- LIVESTOCK	2080 Beverages 2082 Malt Beverages 2084 Wines, brandy, and brandy spirits
0211 Beef Cattle Feedlots 0241 Dairy Farms	2085 Distilled liquor, except brandy 2086 Bottled and canned soft drinks 2087 Flavoring extracts and sirups, nec.
0700 AGRICULTURAL SERVICES	2090 Misc. Foods and Kindred Products 2091 Canned and cured seafoods
MINING	2092 Fresh or frozen packaged fish
1000 METAL MINING 1011 Iron Ores	2200 TEXTILE MILL PRODUCTS
1021 Copper Ores 1081 Metal Mining Services	2300 APPAREL AND OTHER TEXTILE PRODUCTS
1300 OIL AND GAS EXTRACTION 1380 Oil and Gas Field Services	2400 LUMBER & WOOD PRODUCTS 2420 Sawmills and Planing Mills 2430 Millwork, Plywood & Structure Members
1400 NONMETALIC MINERALS 1422 Crushed and Broken Limestone 1440 Sand and Gravel 1450 Clay and Related Minerals 1470 Chemical and Fertilizer Minerals	2440 Wood Containers 2448 Wood pallets and skids 2450 Wood Buildings and Mobile Homes 2491 Wood preserving 2492 Particleboard
1492 Gypsum	2500 FURNITURE AND FIXTURES
CONSTRUCTION	OCOO DADED AND ALL TED DRODUCTO
1500 GENERAL BUILDING CONTRACTORS	2600 PAPER AND ALLIED PRODUCTS 2611 Pulp mills
1600 HEAVY CONSTRUCTION CONTRACTORS	2621 Paper mills except building paper 2631 Paperboard mills
MANUFACTURING	2640 Misc. Converted Paper Products 2650 Paperboard Containers and Boxes 2661 Building paper and board mills
2000 FOOD AND KINDRED PRODUCTS 2010 Meat Products 2011 Meat Packing Plants & Slaughter Houses 2020 Dairy Products 2030 Preserved Fruits & Vegetables	2700 PRINTING AND PUBLISHING 2710 Newspapers 2750 Commercial Printing 2790 Printing Trade Services
2033 Canned Fruits & Vegetables 2035 Pickles, Sauces & Salad Dressings 2037 Frozen Fruits & Vegetables 2040 Grain Mill Products 2043 Cereal Breakfast Foods 2047 Dog, Cat & Other Pet Food 2050 Bakery Products 2060 Sugar and Confectionary Products	2800 CHEMICALS AND ALLIED PRODUCTS 2810 Industrial Inorganic Chemicals 2820 Plastics Materials & Synthetics 2830 Drugs 2840 Soap, Cleaners, and Toilet Goods 2850 Paints and Allied Products 2860 Industrial Organic Chemicals
2063 Beet Sugar 2070 Fats & Oils 2076 Vegetable Oil Mills 2077 Animal & Marine Fats & Oils	2870 Agricultural Chemicals 2890 Miscellaneous Chemical Products 2891 Adhesives and sealants

Code Title	Code Title
MANUFACTURING (Continued)	MANUFACTURING (Continued)
2892 Explosives 2893 Printing Inks 2899 Salt (by evaporation)	3398 Metal heat treating 3400 FABRICATED METAL PRODUCTS
2900 PETROLEUM AND COAL PRODUCTS 2911 Petroleum refining 2950 Paving and roofing materials	3410 Metal cans & shipping containers 3420 Cutlery,hand tools, & hardware 3430 Plumbing & heating, except electric 3440 Fabricated structural metal products
3000 RUBBER AND MISC. PLASTIC PRODUCTS 3011 Tires and inner tubes 3069 Fabricated rubber products 3079 Miscellaneous plastic products	3442 Metal doors, sash & trim 3443 Fabricated plate work (boiler shops) 3444 Sheet metal work 3450 Screw machine products,bolts, etc. 3460 Metal forgings and stampings
3100 LEATHER AND LEATHER PRODUCTS 3111 Leather tanning and finishing	3462 Iron and steel forgings 3463 Nonferrous forgings 3465 Automotive stampings 3470 Metal services
3200 STONE,CLAY,AND GLASS PRODUCTS 3220 Glass and Glassware,Pressed or Blown 3241 Cement 3250 Structural Clay Products 3260 Pottery and Related Products	3471 Plating and polishing 3479 Metal coating and allied services 3480 Ordnance and Accessories 3490 Misc. Fabricated Metal Products
3270 Concrete, Gypsum and Plaster Products 3271 Concrete block and brick 3273 Ready-mixed concrete 3274 Lime	3500 MACHINERY, EXCEPT ELECTRICAL 3510 Engines and turbines 3520 Farm and Garden Machinery 3530 Construction & Related Machinery
3275 Gypsum products 3290 Misc. Nonmetallic Mineral Products 3291 Abrasive products 3292 Asbestos products 3295 Minerals,ground or treated	3540 Meatworking machinery 3550 Special Industry Machinery 3560 General Industrial Machinery 3570 Office & Computing Machines 3580 Refrigeration & Service Machinery
3297 Nonclay refractories	3590 Misc. Machinery, except electrical
3300 PRIMARY METAL INDUSTRIES 3310 Blast Furnaces & Basic Steel Products 3312 Blast Furnaces & Steel Mills 3313 Electrometallurgical products 3315 Steel wire and related products 3316 Cold finishing of steel shapes 3317 Steel pipe and tubes 3320 Iron and Steel Foundries 3321 Gray iron foundries	3600 ELECTRIC AND ELECTRONIC EQUIPMENT 3610 Electric Distributing Equipment 3620 Electrical Industrial Apparatus 3630 Household appliances 3640 Electric lighting and wiring equipment 3650 Radio & TV Receiving Equipment 3660 Communication Equipment 3670 Electronic Components & Accessories 3690 Misc. Electrical Equipment & Supplies
3322 Malleable iron foundries 3330 Primary Nonferrous Metals 3331 Primary copper 3332 Primary lead 3333 Primary zinc 3334 Primary aluminum 3340 Secondary Nonferrous Metals 3360 Die Casting 3361 Aluminum foundries 3362 Brass, bronze & copper foundries 3390 Misc. Primary Metal Products	3700 TRANSPORTATION EQUIPMENT 3710 Motor Vechicles & Equipment 3711 Motor Vechicles & Car Bodies 3714 Motor Vechicles & Accessories 3715 Truck trailers 3720 Aircraft and parts 3730 Ship & Board building and repairing 3740 Railroad Equipment 3750 Motorcycles, Bicycles & Parts 3760 Guided Missles, Space Vechicles Parts

#### SERVICES (Continued) MANUFACTURING (Continued) 3790 Miscellaneous Transportation Equipment 7030 Camps and Trailering Parks 3792 Travel trailers & campers 7032 Sporting and recreational camps 3795 Tanks and tank components 7210 Laundry, Cleaning & Garment Services 7215 Coin-operated laundries 3800 INSTRUMENTS & RELATED PRODUCTS 3810 Engineering & Scientific Instruments 7391 Laboratories-testing and research 3820 Measuring & Controlling Devices 3830 Optical Instruments and Lenses 7399 Water softener service 3840 Medical Instruments and Supplies 3860 Photographic Equipment & Supplies 3900 MISCELLANEOUS MANUFACTURING 7500 AUTO REPAIR SERVICES & GARAGES **INDUSTRIES** 7530 Automotive Repair Shops 7542 Car Washes 3910 Jewelry, Silverware & Plated Ware 3930 Musical Instruments 3940 Toys & Sporting Goods 7900 AMUSEMENT & RECREATION SERVICES 3950 Pens, Pencils, Office & Art Supplies 7933 Bowling alleys 3990 Miscellaneous Manufactures 7940 Commercial sports 7941 Sports clubs and promoters 7948 Racing including track operation TRANSPORTATION 7992 Public golf courses 4010 RAILROADS 7996 Amusement parks 7997 Membership sports & recreation clubs 4200 TRUCKING AND WAREHOUSING 4210 Trucking Local & Long Distance 8000 HEALTH SERVICES 4214 Hauling Liquid Wastes 8050 Nursing and personal care facilities 8060 Hospitals 4221 Farm Product Warehousing & Storage 8070 Medical and Dental Laboratories 4222 Refrigerated Warehousing 4230 Trucking Terminal Facilities 8080 Outpatient Care Facilities 4400 WATER TRANSPORTATION 4430 Great Lakes Transportation 4440 Transportation on Rivers and Canals 4452 Ferries 4454 Towing and tugboat services 4460 Water Transportation Services 4463 Marine Cargo Handling **SERVICES** 4900 ELECTRIC, GAS & SANITARY SERVICES 4911 Electric Services 4925 Gas production and/or distribution 4953 Refuse systems 5810 EATING & DRINKING PLACES 6512 OFFICE BUILDINGS

7000 HOTELS & OTHER LODGING PLACES 7011 Hotels, motels, & tourist courts

#### ATTACHMENT I

#### II. PROCESS AND PRODUCTS

- 1. There are sixteen chemicals listed on Table I which I have not included since they are lab quantities and are sledom used.
- 2. Chemicals from Table I
  - 1. Used for boiling out (cleaning) certain process equipment.
  - 127. Used as an insulating fluid in transformers and capacitors.
  - 151. Used as a contact weed killer.
  - 156. Small component of a dye for paper.
  - 158. Used for bleaching paper pulp.
  - 167. Used for boil outs, and pH adjustment of paper pulp.
  - 169. Used for manufacturing chemical 167.

#### V. SPILL PREVENTION

MATERIAL	VOLUME	LOCATIONBLDG. # **
Hydrogen Peroxide	12,000 gal.	outside 307
#6 Fuel Oil	500,000 gal.	north of 503
Sodium Hydroxide 50%	4,400 gal.	314
Sodium Hydroxide 50#	12,500 gal.	112
Aluminum Sulfate 36° Be	5,700 gal.	108
Aluminum Sulfate 36° Be	12,000 gal.	307
Aluminum Sulfate 36° Be	10,000 gal.	150
Sodium Hypochlorite	18,000 gal.	108
Sodium Hypochlorite	12,000 gal.	307
Rosin 77%	13,600 gal.	109
Neuphor (synthetic rosin)	12,000 gal.	307
Latex 50%	24,000 gal.	307
Sodium Silicate	13,500 gal.	307
Clay 70%	90,500 gal.	114
Clay 70%	87,000 gal.	302
Fluorescent Dye	5,000 gal.	409
Starch	100 tons	outside 401
Starch	100 tons	outside 304
Chlorine	55 tons	betw. 503 and 112
Chlorine	1-ton cylinders	outside 159
Sodium Hydrosulfite	2-ton containers	302/306

<sup>\*\*</sup>See Attachment II

## NON-DOMESTIC USER SURVEY FORM

UPDATED 7-15-87

I.	GENERAL INFORMATION	Received by mail	7- 22-87
	GEORGIA PACIFIC CORP. Corporate Name	KALAMAZOO PAPE Plant Name	R OIV.
	2425 KING HWY. Address - Street and Number	Address - Street ar	nd Number
	KALAMAZOO MI. 49003 City Zip Code	City	Zip Code
		616 - 382 - 2 Plant Phone Number	890
	PAUL H. STOFER EFFLUENT ENCORPORT STORE AND TITLE OF Person Completing Report	SINEER 616 38	82-2890 e Number
	The information contained in this questionr of my knowledge and belief, such information	on is true, complete and	accurate.
	Date    Transport   France   F	ble Official Resident	NT MILL MANAGER e
	THOMAS F. S Print or Type Name of	ULLIUAN Responsible Official	
1.	Nature of business: PRINTING PAPE SECONDARY FIBER DEINKIN		ING AND
•	(2) (6) (2) (1) Other [		
3.	Write the appropriate Standard Industrial C What types of waste(s) do you discharge to	•	ove.
J.	A. Sanitary B. Wash		nse Waters rubber Waters
4.	Do you use, store or discharge any acids, b  A. ( ) Yes B. ( ) No	ases or materials liste	d in Table I?
5.	Does the operation of your processes or was in a residual residue or sludge type waste?  A. ( ) Yes B. ( ) No		ity result

6.	Sch	nedule of operations:
	Α	385 Number of employees.
	В	24 hrs/day 7 days/wk 3 shifts/day 12 mos/yr
7.	Α.	If you answered only A to question three(3), sign and return this portion of survey form.
	В.	If you answer to question three (3) is other than A, complete Section II through VIII of this form, sign it, and return to:
II.	PRO	Jean Eldred, Industrial Surveillance Technician Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007  Kalamazoo, Michigan 49007
		Provide a complete list of products used or stored on the site which appear on Table I (the consolidated Critical Materials List and Priority Pollutants List). If you use trade name or proprietory chemicals which do not list contents on the package, indicate the trade name(s) and manufacturer's name(s) at this time. You must also write the manufacturer to request an OSHA Form 20 for each such substance and provide POTW with the necessary information when available, i.e., use numbers NOT chemical name, Table I:
		(I) (II) (II) (II) (II) (II) (II) (III) (III) (III)
	2.	Describe each process (add sheets if needed):  SEE ATTACHMENT I
	3.	Is any of the enclosed information considered to be confidential?  AYes BNo C. If yes, explain what and why (all requests for confidentiality will be processed according to 40 CFR Part 2):
	4.	Water Supply: A. Municipal B. Well C. Other, explain
		D. Consumption Used: A. 9600 £73/month (ft3, gals per time unit)  B. 7.862 m.C.D. 3.55 HG/D  Consumption Total: C. 7.862 m.C.D. 3.55 HG/D
		Does your facility have a Spill Prevention Control and Counter Measures Program (SPOC) CFR 112 or a Pollution Incident Prevention Plan (PIPP) MDNR Rule five (5).
		A. Yes B. No

III.	PRO	PROCESS WASTEWATER				
<pre>1. Identify outfalls (circle):</pre>						
		A. Surface waters. Name of receiving waters:  B. Septic tank-file field.  C. Surface of ground.  D. Municipal sanitary sewer.				
		<ul><li>E. Storm sewer.</li><li>F. Other, describe    (include line drawing(s) of process flows and all floor drain discharging to each outfall)</li></ul>				
	2.	3.5 MILLION  Volumes of discharge: A. Average Daily Flow: 7.5 MILLION  B. Maximum Daily Flow: 8.5 MILLION  C. Flow is: Measured Estimated  5.5 MILLION				
	3.	Type of wastewater:				
		A. % Process 99 B. % Cooling C. % Sanitary / D. % Other				
	4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?  A. Vyes B. No If yes, estimate area drained 408,000 sq. ft.				
IV.	DIS	SPOSAL PRACTICES (add extra pages if necessary)				
1. How do you dispose of spent chemicals (explain)? OIL - PURCHASED BY						
		OIL DEALER CHEMICAL - DISPOSED OF BY -A 1 DISPOSAL & CENSED				
	2.	CHEMICAL WASTE DISPOSAL CONTENCIONS A. Volume Disposed of: How do you dispose of spoilage (explain)? DISPOSAL				
		LICENSED CHEMICAL WASTE DISPOSAL CONTRACTORS.				
	3.	How do you dispose of precipitates and/or sludges (explain)? THEY ARE DISPOSED OF IN A LANDFILL ON OUR OWN PROPERTY.				
		A. Volume Disposed of: 30 TONS LOAV				
	4.	Name of waste hauler: A-1 DISPOSAL EPA IO. License No. MIO 059695452				
	5.	Do you have pretreatment for your wastes? A. Yes B. No				
		If box A is checked: Type: PRIMARY CLARIFIER				
		Size: 203,376 FT3 Frequency of Operation: CONTINUOUS				
		If box B is checked, where and how are the wastes disposed of?				
		To sanitary sewer ( ) To storm sewer ( )				
		Industrial Waste Hauler ( ) Other ( )				
		If other, explain				

6.		you have any air emission control equipment which would discharge to the ver system?  A. Yes B. No	
7.	Are	e any of the materials listed in Table I discharged with the wastes?	
	Α.	Yes B. No	
	С.	List by number from Table I: (1) (156) (767) (1) (1)	
٧.	SPI	LL PREVENTION (add extra pages if necessary) SEE ATTACHMENT I	
	<ol> <li>List bulk materials stored on site (liquid, solids), (including cleaning agents).</li> </ol>		
		Material: Volume: Location in plant:	
		Material: Volume: Location in plant:	
	2.	Is separate secondary containment provided for bulk materials?	
		AYes BNo CSome	
	3.	Is separate secondary containment provided for those processes which contain chemicals listed in Table I?  A.   Yes B.  No C.   Some	
	4	A. ()Yes B. ()No C. () Some  Has separate storage been provided for those chemicals which cause hazardous	
	4.	reactions, j.e., acid with cyanide, acids with bases?	
		A. DYes B. No	
/1.	SAM	PLING AND ANALYSIS	
	1.	Are sampling points available for each:	
		A. Process Line Yes No	
	_	B. Outfall Ves No	
	2.	Do you sample your process discharge(s)? Yes No	
	3.	Type of sample A. Grab B. Composited  If Box B is checked, is sample composited to A. Offlow B. Offime	
	4.	Is a sampling vault and/or manhole provided?  A. Pyes B. No	
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.):  24 HRs,	
	6.	What laboratory analysis (wastewater/solids) can be run on site? NONE	

#### VII. MISCELLANEOUS

1.	Describe any safety precautions to be observed by those visiting at your site: ANY VISITATION MUST BE APPROVED BY THE
	MILL MANAGER AND SAFETY PRECAUTIONS WILL BE DISCUSSED
	ATTHAT TIME

2. Contact Person: Name THOMAS F. SULLIVAN

Title RESIDENT MILL MANAGER

Phone Number 382 - 2890 EXT. 201

302

#### NON-DOMESTIC USER SURVEY FORM

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

#### TABLE I

The following is a list of the U.S. EPA Priority Pollutants consolidated with the current Critical Materials Register compiled by the Michigan Department of Natural Resources.

#### ORGANICS

1. acids acenaphthene acetone cyanohydrin 2-acetylaminofluorene acrolein acrylic acid 6. acrylonitrile 7. 8. allyl chloride 9. 2-aminoanthraquinone 10. aminoazobenzene o-aminoazotoluene 12. 4-aminobiphenyl 13. 3-amino-9-ethylcarbazole 14. l-amino-2-methylanthraquin 15. aminotriazole (amitrole) aniline 16. 17. aniline hydrochloride o-anisidine 19. o-anisidine hydrochloride 20. benz(a)anthracene 21. benzene 22. benzidine 23. benzidine salts 24. benzo(a)pyrene 25. brucine 26. carbon tetrachloride 27. chlorinated benzenes 27. a. chlorobenzene 27. b. 1,2,4-trichlorobenzene 27. c. 1,2-dichlorobenzene 27. d. 1,3-dichlorobenzene 27. e. 1,4-dichlorobenzene 28. chlorinated dibenzofurans 29. chlorinated dioxins 30. chlorinated ethanes 30. a. 1,1,1-trichloroethane b. 1,1-dichloroethane 30. 30. C. chloroethane d. 1,1,2,2-tetrachloroethane 30. 31. chlorinated naphthalene 31. 2-chloronaphthalene 32. chlorinated phenols 32. a. 2-chlorophenol 32. b. parachlorometa-cresol 32. c. 2,4-dichlorophenol 33. 1-chloro-2,3-epoxypropane 34. chloroalkyl ethers 35. bis(2-chloroethyl ether

36.

chloroform

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bis(2-chloromethyl) ether
38., 3-(chloromethyl) pyridine hydrochloride
39. 1-(4-chlorophenyl)-3, 3-dimethyl triazene
40. 4-chloro-m-phenylenediamine
41. 4-chloro-o-phenylenediamine
42. chloroprene
43.
     5-chloro-o-toluidine
44. p-cresidine
45. 2,4-diaminoanisole sulfaté
46.
     4,4-diaminodiphenyl ether
47.
     2,4-diaminotoluene
48. dibenz (a,h)anthracene
49.
     tris(dibromopropyl)phosphate
50.
     di-n-butyl phthalate
51.
     3,3-dichlorobenzidine
52.
     3,3-dichlorobenzidine salts
53.
     1,2-dichloroethane
54.
     dichloroethylenes
54.
     a. 1,1-dichloroethylene
54.
     b. 1,2-trans-dichloroethylene
55.
     dichloropropane and dichloropropene
55.
         1,3-dichloropropylene;
         (1,3-dichloropropene)
55.
         1,2-dichloropropane
56.
     1,2:3,4-diepoxybutane
57.
     diethyl sulfate
58.
     4-dimethylaminoazobenzene
59.
     dimethylhydrazines
60.
     2,4-dimethylphenol
61.
     4,6-dinitro-o-cresol
62.
     2,4-dinitrophenol
63.
     2,4-dinitrotoluene
64. dinitrotoluene
64. a. 2,6-dinitrotoluene
65.
     di-n-octyl phthalate
66.
     1,4-dioxane
67.
     2,3-epoxy-1-propanal
68.
     ethylbenzene
69.
     ethylene dibromide
70. ethyleneimine
71.
     ethylene oxide
72.
     ethylene thiourea
73.
     bis(2-ethylhexyl)phthalate
74.
     ethylmethanesulfonate
75.
     fluoranthene
     2-(2-formylhydrazino)-4-(5-nitro-2-fury)-
76.
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thiazole

77.	Haloethers a. 4-chlorophenyl phenyl ether	116. N-nitrosomethylvinylamine
		117. N-nitrosomorpholine
	<ul><li>b. 4-bromophenyl phenyl ether</li><li>c. bis(2-chloroisopropyl) ether</li></ul>	118. N-nitroso-N-phenylhydroxyl-amine,
77. 77.		ammonium salt
77. 78.		119. N-nitrososarcosine
78. 78.		120. pentachloronitrobenzene
70.	(dichloromethane)	121 / pentachlorophenol
78.		122. peroxyacetic acid
78. 78.		123. phenol
78.		124. Phthalate esters
78.	· · · · · · · · · · · · · · · · · · ·	124. a. butyl benzyl phthalate 124. b. diethyl phthalate
78.		<pre>124. b. diethyl phthalate 124. c. dimethyl phthalate</pre>
78.		125. piperonyl sulfoxide
78.	<b>-</b>	126. polybrominated biphenyls (PBB)
79.		127. polychlorinated biphenyls (PCB)
80.	hexachlorobutadiene	128. polynuclear aromatic hydrocarbons
81.	hexachlorocyclohexane	
82.	hexachlorocyclopentadiene	<pre>128. a. 3,4-benzofluoranthene 128 b. benxo(k) fluoranthane;</pre>
83.		(11,12-benzofluoranthene)
84.	<u> </u>	128. c. chrysene
85.		128. d. acenaphthylene
86.		128. e. anthracene
87.		128. f. benzo(ghi)perylene;
88.		(1,12-benzoperylene)
89.	malachite green	128. g. fluorene
90.	methylenebis(2-chloroaniline)	128. h. phenathrene
91.	4,4-methylenebis(2-methylaniline)	128. i. indeno(1,2,3-cd)pyrene;
92. 93.	4,4-methylenebis(N,N-dimethylaniline)	(2,3-0-phenylenepyrene)
93.	<pre>1,2(methylenedioxy)-4-propenyl benzene</pre>	128. j. pyrene
94.	methyl hydrazine	128. k. naphthalene
95.	l-methylnaphthalene	129. l,3-propane sultone
96.	2-methyl-l-nitroanthraquinone	130. B-proplolactone
97.	mustard gas	131. 5-propyl-1,3-benzodioxole
98.	1,5-naphthalenediamine	132. propyleneimine
99.		133. semicarbazide
100.	2-naphthylamine	134. styrene
101.	5-nitroacenaphthene	<pre>135. tetrachloroethylene(perchloroethylene) 136. thioacetamide</pre>
102.	5-nitro-o-anisidine	133. 4,4-thiodianiline
103.	nitrobenzene	138. thiourea
104.	4-nitrobiphenyl	139. toluene
105.	nitrogen mustard	140. o-toluidine
106.	2-nitrophenol	141. o-toluidine hydrochloride
107.	4-nitrophenol	142. triaryl phosphate esters
108. 108.	Nitrosamines	143. 1,1,2-trichloroethane
108.	<ul><li>a. N-nitrosodiphenylamine</li><li>b. N-nitrosodi-n-propylamine</li></ul>	144. trichloroethylene
100.	<ul><li>b. N-nitrosodi-n-propylamine</li><li>N-nitroso-n-butyl-N-(4-hydroxybutyl)</li></ul>	145. trichlorophenols
109.	amine	146. 2,4,5-trimethylaniline
710.	N-nitrosodiethylamine	147. trimethylphosphate
111.	N-nitrosodimethylamine	148. vinylchloride
112.	p-nitrosodiphenylamine	149. xylene
113.	N-nitroso-N-ethylurea	
114.	N-nitroso-N-methylurea	ORGANICS CONTINUED ON PAGE 3
115.	N-nitroso-N-methylurethane	

Α.	INORGANICS	PEST:	ICIDES (Continued)
150.	antimony	194.	chlorpyrifos
151.		195.	clonitralid
152.	beryllium	196.	
153.	cadmium		crotoxyphos
154.	chromium		cycloheximide
155.	cobalt	199.	
156.	copper	200.	
157.	cyanides		diallate
158.	hypochlorite		diazinon
159.	lead		dibromochloropropane (DBCP)
160.	lithium		dichlone
161.	mercury		dichlorvos
162.	nickel	206.	
163.	selenium	207.	•
164.		208.	
165.		209.	
166.	zinc	210.	
100.	21110		dioxathion
В. І	NORGANICS		disulfoton
<u></u>			endosulfan
167.	acids	214.	
168.		215.	
	chlorine	216.	ethion
170.		217.	fensulfothion
171.	hydrogen sulfide	218.	fenthion
		219.	fluchloralin
C. I	NORGANICS	220.	heptachlor
		221.	heptachlor epoxide
172.	asbestos (fibrous) - INSULATION	222.	Isomers of hexachlorocyclohexane
		222.	a. a-BHC-Alpha
PESTI	CIDES	222.	b. b-BHC-Beta
	<del></del>	222.	c. g-BHC-Delta
173.	aldicarb	223.	leptophos
174.	aldrin	224.	malathion
175.	4-aminopyridine	225.	metabolites of DDT
176.	anilazine	225.	a. 4,4'-DDE;(p,p'-DDE)
177.	antimycin A	225.	b. 4,4'-DDD;(p,p'-TDE)
178.	azinphos-ethyl	226.	metabolites of endosulfan
179.	azinphos-methyl	226.	a. endosulfan sulfate
180.	barban	227.	metabolities of endrin
181.	bendiocarb	227.	a. endrin aldehyde
182.	benomyl	228.	metabolites of heptachlor
183.	bromoxynil	228.	<ul> <li>a. heptachlor epoxide</li> </ul>
184.	2(p-tert-butylphenoxy)-isoprophyl-	229.	methomyl
105	2-chloroethyl sulfite	230.	methoxychlor
185.	captafol	231.	methyl mercaptan
186.	captan	232.	methyl parathion
187.	carbaryl	233.	mevinphos
188.	carbofuran	234.	mexacarbate
189.	carbophenothion	235.	mirex
190.	chlordane	236.	monocrotophos
191.	chlordecone	237.	naled
192.	chlorfenvinphos	238.	nicotine
193.	chlorobenzilate	239.	nitrofen _
		240.	oxydemeton-methyl

## PESTICIDES (Continued)

- 241. paraquat 242. parathion 243. phorate244. phosazetim 245. phosmet 246. phosphamidon 247. rotenone 248. silvex, propylene glycolbutyl ether ester 249. sodium fluoroacetate 250. strychnine 251. sulfallate 252. sulfotepp
- 253. TDE 254. TEPP
- 255. terbufos
- 256. tetrachlorvinphos257. thiram
- 258. toxaphene
- 259. trichlorfon
- 260. trichlorophenoxyacetic acid (2,4,5-T)
- 261. trifluralin
- 262. ziram

#### ATTACHMENT A

### STANDARD INDUSTRIAL CLASSIFICATION CODES

Note: This is an edited list.

CodeTitle	Code Title
AGRICULTURE	MANUFACTURING (Continued)
0100 AGRICULTURAL PRODUCTION-CROPS 0200 AGRICULTURAL PRODUCTION- LIVESTOCK 0211 Beef Cattle Feedlots 0241 Dairy Farms 0700 AGRICULTURAL SERVICES MINING	2080 Beverages 2082 Malt Beverages 2084 Wines, brandy, and brandy spirits 2085 Distilled liquor, except brandy 2086 Bottled and canned soft drinks 2087 Flavoring extracts and sirups, nec. 2090 Misc. Foods and Kindred Products 2091 Canned and cured seafoods 2092 Fresh or frozen packaged fish
1000 METAL MINING	2200 TEXTILE MILL PRODUCTS
<pre>1011 Iron Ores 1021 Copper Ores 1081 Metal Mining Services</pre>	2300 APPAREL AND OTHER TEXTILE PRODUCTS
1300 OIL AND GAS EXTRACTION 1380 Oil and Gas Field Services	2400 LUMBER & WOOD PRODUCTS 2420 Sawmills and Planing Mills 2430 Millwork, Plywood & Structure Members
1400 NONMETALIC MINERALS 1422 Crushed and Broken Limestone 1440 Sand and Gravel 1450 Clay and Related Minerals 1470 Chemical and Fertilizer Minerals 1492 Gypsum	2440 Wood Containers 2448 Wood pallets and skids 2450 Wood Buildings and Mobile Homes 2491 Wood preserving 2492 Particleboard 2500 FURNITURE AND FIXTURES
CONSTRUCTION 1500 GENERAL BUILDING CONTRACTORS 1600 HEAVY CONSTRUCTION CONTRACTORS	2600 PAPER AND ALLIED PRODUCTS 2611 Pulp mills 2621 Paper mills except building paper 2631 Paperboard mills 2640 Misc. Converted Paper Products
MANUFACTURING	2650 Paperboard Containers and Boxes 2661 Building paper and board mills
2000 FOOD AND KINDRED PRODUCTS 2010 Meat Products 2011 Meat Packing Plants & Slaughter Houses 2020 Dairy Products 2030 Preserved Fruits & Vegetables 2033 Canned Fruits & Vegetables	2700 PRINTING AND PUBLISHING 2710 Newspapers 2750 Commercial Printing 2790 Printing Trade Services
2035 Pickles, Sauces & Salad Dressings 2037 Frozen Fruits & Vegetables 2040 Grain Mill Products 2043 Cereal Breakfast Foods 2047 Dog, Cat & Other Pet Food 2050 Bakery Products 2060 Sugar and Confectionary Products 2063 Beet Sugar 2070 Fats & Oils 2076 Vegetable Oil Mills 2077 Animal & Marine Fats & Oils	2800 CHEMICALS AND ALLIED PRODUCTS 2810 Industrial Inorganic Chemicals 2820 Plastics Materials & Synthetics 2830 Drugs 2840 Soap, Cleaners, and Toilet Goods 2850 Paints and Allied Products 2860 Industrial Organic Chemicals 2870 Agricultural Chemicals 2890 Miscellaneous Chemical Products 2891 Adhesives and sealants

Code	Title	Code	وسنوا والموارد والموارد المائنة المائنة المائنة الموارد والموارد والموارد والموارد والموارد والموارد	Title
MANUFAC	CTURING (Continued)	MANU	FACTURING (Continu	ed)
2892 Ex 2893 Pr	cplosives Finting Inks	3398	Metal heat treati	ng
	alt (by evaporation)		FABRICATED METAL Metal cans & ship	
	TROLEUM AND COAL PRODUCTS troleum refining	3420	Cutlery, hand tool	
2950 Pa	ving and roofing materials	3440	Fabricated struct Metal doors, sash	ural metal products
	BBER AND MISC. PLASTIC PRODUCTS res and inner tubes	3443		work (boiler shops)
3069 Fa	bricated rubber products	3450	Screw machine pro	
• • • • • • • • • • • • • • • • • • • •	scellaneous plastic products	3462	Metal forgings an Iron and steel fo	rgings
	ATHER AND LEATHER PRODUCTS ather tanning and finishing	3465	Nonferrous forgin Automotive stampi	
3200 ST	ONE,CLAY,AND GLASS PRODUCTS		Metal services Plating and polis	hing
3220 G1 3241 Ce	ass and Glassware,Pressed or Blown ment	3479	Metal coating and Ordnance and Acce	allied services
	ructural Clay Products ttery and Related Products		Misc. Fabricated	
3270 Co	ncrete,Gypsum and Plaster Products ncrete block and brick		MACHINERY, EXCEPT Engines and turbi	
	ady-mixed concrete	3520	Farm and Garden M Construction & Re	achinery
3275 Gy	psum products	3540	Meatworking machi	nery
3291 Ab	sc. Nonmetallic Mineral Products rasive products	3560	Special Industry General Industria	l Machinery
3295 Mi	bestos products nerals,ground or treated	3580	Office & Computing Refrigeration & S	ervice Machinery
	nclay refractories		Misc. Machinery,	·
3310 Bla	IMARY METAL INDUSTRIES ast Furnaces & Basic Steel Products	3610	ELECTRIC AND ELECTED ELECTRIC Distribution	ting Equipment
	ast Furnaces & Steel Mills ectrometallurgical products		Electrical Industry Household appliance	
	eel wire and related products Id finishing of steel shapes		Electric lighting Radio & TV Receiv	and wiring equipment
3317 Ste	eel pipe and tubes on and Steel Foundries	3660	Communication Equ	
3321 Gra	ay iron foundries Heable iron foundries		•	Equipment & Supplies
3330 Pri	imary Nonferrous Metals imary copper		TRANSPORTATION EQUATION TRANSPORTATION EQUATION TO THE PROPERTY OF THE PROPERT	
3332 Pri	imary lead	3711	Motor Vechicles &	Car Bodies
3334 Pri	mary zinc mary aluminum	3715	Motor Vechicles & Truck trailers	
3360 Die	condary Nonferrous Metals c Casting	3730		ding and repairing
3362 Bra	uminum foundries ss,bronze & copper foundries	3750	Railroad Equipment Motorcycles, Bicyc	les & Parts
3390 Mis	c. Primary Metal Products	3760	Guided Missles, Spa	ace Vechicles Parts

MANUFACTURING (Continued)	SERVICES (Continued)
3790 Miscellaneous Transportation Equipment 3792 Travel trailers & campers 3795 Tanks and tank components 3800 INSTRUMENTS & RELATED PRODUCTS 3810 Engineering & Scientific Instruments	7030 Camps and Trailering Parks 7032 Sporting and recreational camps 7210 Laundry, Cleaning & Garment Services 7215 Coin-operated laundries 7391 Laboratories-testing and research
3820 Measuring & Controlling Devices 3830 Optical Instruments and Lenses 3840 Medical Instruments and Supplies 3860 Photographic Equipment & Supplies	7399 Water softener service
3900 MISCELLANEOUS MANUFACTURING INDUSTRIES 3910 Jewelry, Silverware & Plated Ware 3930 Musical Instruments	7500 AUTO REPAIR SERVICES & GARAGES 7530 Automotive Repair Shops 7542 Car Washes
3940 Toys & Sporting Goods 3950 Pens, Pencils, Office & Art Supplies 3990 Miscellaneous Manufactures	7900 AMUSEMENT & RECREATION SERVICES 7933 Bowling alleys 7940 Commercial sports 7941 Sports clubs and promoters
TRANSPORTATION	7948 Racing including track operation
4010 RAILROADS	7992 Public golf courses 7996 Amusement parks
4200 TRUCKING AND WAREHOUSING 4210 Trucking Local & Long Distance 4214 Hauling Liquid Wastes 4221 Farm Product Warehousing & Storage 4222 Refrigerated Warehousing 4230 Trucking Terminal Facilities	7997 Membership sports & recreation clubs 8000 HEALTH SERVICES 8050 Nursing and personal care facilities 8060 Hospitals 8070 Medical and Dental Laboratories 8080 Outpatient Care Facilities
4400 WATER TRANSPORTATION 4430 Great Lakes Transportation 4440 Transportation on Rivers and Canals 4452 Ferries 4454 Towing and tugboat services 4460 Water Transportation Services 4463 Marine Cargo Handling	
SERVICES	
4900 ELECTRIC, GAS & SANITARY SERVICES 4911 Electric Services 4925 Gas production and/or distribution 4953 Refuse systems	
5810 EATING & DRINKING PLACES	

6512 OFFICE BUILDINGS

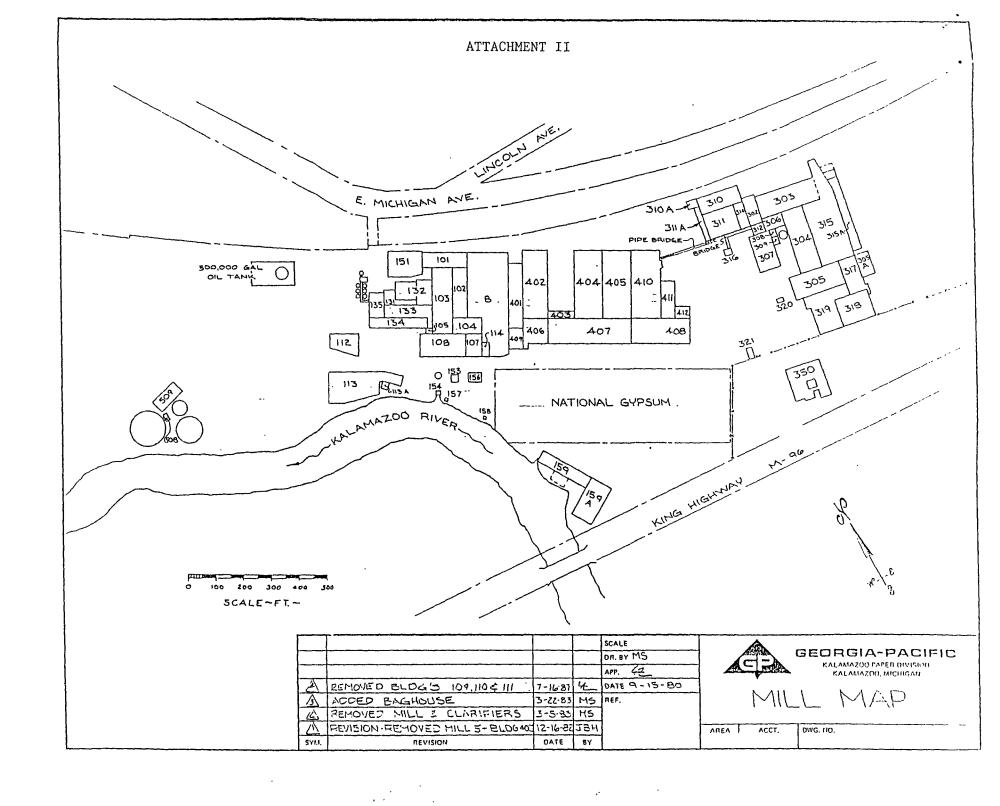
7000 HOTELS & OTHER LODGING PLACES 7011 Hotels, motels, & tourist courts

#### ATTACHMENT I

#### II. PROCESS AND PRODUCTS

- There are sixteen chemicals listed on Table I which I have not included since they are lab quantities and are sledom used.
- Chemicals from Table I
  - 1. Used for boiling out (cleaning) certain process equipment.
  - 127. Used as an insulating fluid in transformers and capacitors.
  - 151. Used as a contact weed killer.
  - -156. Small component of a dye for paper.
  - 158. Used for bleaching paper pulp. BOND HEAT EXCHANGER ANTI FOUL
  - Used for boil outs, and pH adjustment of paper pulp. 167.
- 169. Used for manufacturing chemical 167. IZI. STARCH BIOCIDE 172. PIPE, TANK IUSULATION SPILL PREVENTION

V. DITED TREVERTION		•
MATERIAL	VOLUME	LOCATIONBLDG. # **
Hydrogen Peroxide	12,000 gal.	outside 307
#6 Fuel Oil	500,000 gal.	north of 503 WEST OF 151
Sodium Hydroxide 50%	-4,400-gal. 24,000	
Sodium Hydroxide 50#	12,500 gal.	
Aluminum Sulfate 36° Be	12,000 5,700 gal.	<del>108</del> 114
Aluminum Sulfate 36° Be	12,000 gal.	307
Aluminum Sulfate 36° Be	12,000 <del>10,000</del> gal.	<del>150</del> 114
Sodium Hypochlorite	18,000 gal.	108
-Sodium Hypochlorite-somom		307
Rosin 77% NEUPHOR	<del>-13,600 gal.</del>	<del>-109</del> 409
Neuphor (synthetic rosin)	12,000 gal.	307
Latex 50%	24,000 gal.	307
-Sodium Silicate-	13,500 gal.	307
Clay 70%	90,500 gal.	114
Clay 70%.	<del>-87,000 gal</del> . \$5,000	302-307
Fluorescent Dye	5,000 gal.	- 409
Starch	100 tons	outside 401
Starch	100 tons	outside 304
-Chlorino	<del>-55 tons</del>	betw. 505 and 112
Chlorine	(12) 1-ton cylinders	outside 159
Sodium Hydrosulfite	2 ton containers	<del>302/306 -</del>
PHENOLIC RESIN	12,000 GAL	307
TITANIUM DIOXIDE	29,000 GAL	302
GASOLING		WEST OF 32 + SOUTH OF 509
** See Attachment II	10,000 GAL	·
DIESEL	12000 LAL	WEST OF 321
Kerosene	5,000 GAL	WEST OF 134
ALUM ALUM	12,000 GAL	WEST OF 134
PHS:CC	7.200 GAL	159
	• • • • • • • • • • • • • • • • • • • •	



Rec. 4/19



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 (517) 332-0167

April 12, 1990

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attn: Mr. Nasim Ansari

#### ANALYTICAL LABORATORY REPORT

**FECL #:** 3984-90-E1-3\*

Samples analyzed by: J. Phifer Analyses requested by: Nasim Ansari

PO#: 49909

Submitting Company: City of Kalamazoo

1415 N. Harrison Kalamazoo, MI 49007

Project description: Georgia Pacific - Special Sampling

Samples collected:

FECL #: 3984-90-E1 Effluent

Tag: Georgia Pacific GEOC08690

Container: Glass Jar Sample Type: Liquid Preservation: None

Sampling date/time: 03-27-90

FECL #: 3984-90-R3 Effluent

Tag: Georgia Pacific GEO08690

Samples collected by:

03-30-90 10:30 a.m.

Date/time samples submitted:

T. Menlenberg

Container: Glass Jar Sample Type: Liquid Preservation: None

Sampling date/time: 03-27-90

FECL #: 3984-90-E2

Tag: Georgia Pacific GEOW08690 - River Basin Settlings

Container: Glass Jar Sample Type: Liquid Preservation: None

Sampling date/time: 03-27-90

FECL #: 3795-90-E\*

Tag: Georgoa Pacific GEOB08590

Container: \*Glass Jar Broken on Arrival - Blank

Sample Type: Liquid Preservation: None

Sampling date/time: 03-26-90



Analytical Laboratory Report

City of Kalamazoo FECL #: 3984-90-E1-3

April 12, 1990

Page Two

FECL #: 3984-90-E1

Tag: Georgia Pacific Georgia Pacific

3984-90-E2

GEOC08690 GEOW08690

PCB (Liquid) <0.0001 mg/l <0.0001 mg/l PCB (Sediment) <0.01 mg/kg

FECL #: 3984-90-E\* 3984-90-E3

Tag: Georgia Pacific Georgia Pacific GEOB08590 GEO08690

PCB ----- <0.0001 mg/l

\*Sample Broken on Arrival

V. F Murshall

Violetta F. Murshak Laboratory Manager

VFM/ab

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES 5863 Mo PURPOSE OF ANALYSIS: SAMPLERS: Timitly & Markentery 1415 N Harrison (Signature) Kalamazoo, Michigan 49007 Spraal -rampling 616-385-8157 E/TIME DATE/TIME С **NUMBER & SIZE** ITEM SAMPLE Ö R SAMPLE LOCATION, DESCRIPTION Α SAMPLE I.D. NUMBER OF CONTAINER Μ Α & REMARKS NUMBER М DAT В E Ε GEO C cloudy Clarifier 08690 River Surming Mostly GEOW 8.42 mm Н Base .. soli ks 08690 RECEIVED ( (Signature) GEOB Prechab 3/26/90 9 35 H nE.O 3/27 1:40 08690 DATE/TIME 4 RELINQUISHED BY: (Signature) æ RELINQUISHED (Signature) 5.3 GENERAL/CONVENTIONAL RESULT TRACE METALS ORGANIC COMPOUNDS RESULT pΗ CADMIUM EPA METHOD 601 TOTAL CHROMIUM BOD HEX. CHROME CBOD RECEIVED BY: (Signature) COPPER RECEIVED ( (Signature) COD LEAD ISS VSS NICKEL 2:30 am ZINC **EPA METHOD 602** NH<sub>2</sub>-N DATE/TIME TOTAL P SILVER M A SA ORTHO P MERCURY BERYLLIUM GREASE/OIL Υ. BARIUM CHLORIDE REMARKS ELINQUISHED **CN-TOTAL** PCB'S CN - AMENABLE OTHER



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 385-8157 FAX (616) 385-3015

March 28, 1991

Mr. Phillip D. Hester Environmental Engineer Georgia Pacific Corporation 2425 King Highway Kalamazoo, MI 49001

Dear Mr. Hester:

We are in receipt of your request to discharge up to 200,000 gallons of surface water in 8,000 gallon tanker loads. The analysis performed by Kar Labs for total PCB's resulted in non-detectable levels to less than 0.1 ug/L and therefore meets the water quality criteria of concern to the Kalamazoo Water Reclamation Plant (KWRP).

Georgia Pacific is hereby granted conditional permission to discharge surface water for a two day period during the week of April 1, 1991. The KWRP will further request a sample to be taken the last day of this discharge to once again verify non-detectable levels of PCB's to 0.1 ug/L.

Should you have any questions, please call me at 385-8157.

Sincerely,

Timothy G. Meulenberg

Timethop Meulenberg

Industrial Pretreatment Inspector

TM:rjg/ipp/tm/geo

c: B. Merchant

K. Mottinger

file



Georgia-Pacific Corporation 2425 King Highway
Kalamazoo, Michigan 49001
Telephone (616) 382-2890

DATE: 3-27-91

#### FAX TRANSMITAL

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REFERENCE #



#### Georgia Pacific Corporation

2425 King Highway Kalamazoo, Michigan 49001 Telephone (616) 382-2890

March 26, 1991

Mr. Bruce E. Merchant Industrial Services Supervisor Kalamazoo Water Reclamation Plant 1415 North Harrison Kalamazoo, MI 49007-2565

Subject: Surface Water Disposal

Dear Mr. Merchant:

As a result of recent discussions with the MDNR concerning our King Highway Landfill, we will need to remove surface water from our landfill site so that the wastewater residuals are not deposited into standing water. The residuals we landfill are generated during the pretreatment of our process wastewater by clarification. This process wastewater is discharged to the Kalamazoo Water Reclamation Plant (KWRP) after pretreatment. Since the surface water at the landfill may have come in contact with the residuals, it must be treated prior to discharge.

We propose to dispose of the surface water in our intercept station for pretreatment by our facility, and final treatment by the KWRP. You indicated in a previous phone conversation, that since no material is expected to be present in the surface water other than what is found in our process wastewater, analysis would not be necessary, except to check for Total Polychlorinated Biphenyls (PCB). A surface water sample was collected at the landfill and sent to KAR Laboratories, Inc., for analysis. The attached results show PCB's were non-detectable to less than 0.1 ug/1.

Georgia-Pacific requests approval to dispose of approximately 100,000 to 200,000 gallons of surface water over a two day period, during the week of April 1, 1991. An 8,000 gallon vacuum tanker will pump the water and transport it from the site to the intercept station. The surface water will be discharged from the truck to the intercept station at a controlled rate. This process will be repeated until the removal process is complete.

Mr. Bruce E. Merchant March 26, 1991 Page 2

If you should have any questions, please call me. Your prompt response would be appreciated very much.

Sincerely,

Philip D. Hester

Environmental Engineer

PDH:ddc

Enclosure

cc: A. Campbell

T. Sullivan

W. Jernigan, Atlanta

F. Denney, Atlanta

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666	$\overline{}$

#### ANALYTICAL REPORT

To: Georgia Pacific Corporation

2425 King Highway

Kalamazoo, MI 49001

Attn: Mr. Phil Hester

Proj. No.: 910538
Client No.: 1100
Date Activated: 3/15/91
Date Promised: 3/22/91

Date Validated: 3/22/91 Date Reported: 3/22/91

PO#:

Project Desc.: Analysis of 1 surface water sample.

#### Dear Client:

Attached you will find test results for Project No. 910538. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

#### ANALYTICAL RESULTS

To: Georgia Pacific Corporation

Project No: 910538

Report Date: 3/22/91

Project Desc.: Analysis of 1 surface water sample.

Sample No.:910538-01 Sample type: aqueous Received on: 3/15/91

ID: "King Highway Landfill, 3/15/91, 3:30"

PCB, total <0.1 ug/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### **CHAIN OF CUSTODY RECORD**

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(616) 381-9666	
(010) 001 0000	<b>v</b> V

#### ANALYTICAL REPORT

To: Georgia Pacific Corporation

2425 King Highway

Kalamazoo, MI 49001

Attn: Mr. Phil Hester

Proj. No.: 910671 Client No.: 1100 Date Activated: 4/04/91 Date Promised: 4/25/91 Date Validated: 4/25/91

Date Validated: 4/25/91 Date Reported: 4/25/91

PO#:

Project Desc.: Analysis of one sample from King Hwy Landfill Surface water Disposal.

Dear Client:

Attached you will find test results for Project No. 910671. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

#### ANALYTICAL RESULTS

To: Georgia Pacific Corporation

Project No: 910671 Report Date: 4/25/91

Project Desc.: Analysis of one sample from King Hwy Landfill Surface

water Disposal.

Sample No.:910671-01 Sample type: aqueous Received on: 4/04/91

ID: "Clarifier Effluent, KWRP sampler 24 hr. comp., 4/4/91"

PCB, total

<10 ug/L

High detection limit was due to sample matrix interference.

Unless otherwise noted, test results represent the sample(s) as they were received.



DATE January 8, 1988

## Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031

DATA SUMMARY SHEET

page 1 of 2

				-	bage I	<b>-</b>	
_				·· ·	<u> </u>	<u> </u>	
1111 T M C	Blank 33687	Allied Paper	James River	Georgia Pacific	34387	Inmont	Upjohn
UNITS	12/2/87	12/2/87	12/2/87	12/2/87	12/9/87	12/9/87	12/9/87
ug/l	<0.0l			<0.01	<0.01	<0.01	<0.0l
ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01
ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01
ug/l	(0.02	< 0.02	<0.01	<0.02	<0.02	۷0.02	<0.02
ug/l	< 0.05	< 0.05	< 0.04	<0.05	< 0.05	۷0.05	< 0.05
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	ug/l ug/l ug/l ug/l	UNITS	UNITS   Blank   Allied   Paper   12/2/87   12/	UNITS   Blank   Allied   Paper   River   12/2/87   12/2/87   2/2/8	UNITS	UNITS   Slank   Allied   James   River   Pacific   34387   12/2/87	Blank   Allied   James   River   12/2/87   1



### SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239
Tag:	James River Clarifier 7:50 A.H.	Georgia Pacific Clarifier GEO 11688 10:30 A.M.	Inmont INM1)788
	04/25/88	04/25/68	04/26/88
PCB-1016, ug/L	<0.1	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1	<0.1
PCB-1248. ug/L	<0.1	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1	<0.1
SEG Number:	75240	75241	
Tag:	Allied Paper Clarifier APC 11788	Upjohn Bishop Rd. UJB11788	
	04/26/88	04/26/88	
PCB-1016, ug/L	<0.1	<0.1	
PCB-1221, ug/L	<0.1	<0.1	
PCB-1232, ug/L	<0.1	<0.1	
PCB-1242, ug/L	<0.1	<0.1	
PCB-1248, ug/L	<0.1	<0.1	
PCB-1254, ug/L	<0.1	<0.1	
PCB-1260, ug/L	<0.1	<0.1	

# SEG LABORATORIES, INC.

August 25, 1988

City of Kalamazoo 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Dr. Nasım Ansarı

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on July 20, 1988.

PO#: 43111

		<del></del>		
SEG Number:	77253	77254	77255	77256
Tag:	James River #JRC 20088 8:10 A.H. 7/18/88	Inmont #1NM 20088 8:35 A.H. 7/18/88	Allied Paper *APC 20088 9:15 A.M. 7/18/88	Upjohn- Bishop #UJB 20088 10:10 A.H. 7/18/88
PCB - 1016, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1221, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1232, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1242, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1248, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1254, ug/L	<0.1	<0.1	<0.1	<0.1
PCB - 1260, ug/L	<0.1	<0.1	<0.1	<0.1

( min Pacific - Data Fix

City of ka	lamazoo
Analytical	Results Continued
Attn: Dr.	Nasim Ansari
August 25,	1988
Page Two	

SEG	N	umber:		77257
Tag	•			Georgia Pacific #GEO 20088 10:55 A.M. 7/18/88
РСВ	-	1016,	ug/L	<0.1
PCB	-	1221,	ug/L	<0.1
PCB	-	1232,	ug/L	<0.1
PCB	-	1242,	ug/L	<0.1
РСВ	-	1248,	ug/L	<0.1
РСВ	_	1254.	ug/L	<0.1

<0.1

Approved by Joseph Lori A. Vachon

LAV/jp

PCB - 1260, ug/L



# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031

### DATA SUMMARY SHEET

Sample Name/Date

		ಶಿಷ	impie Na	me/Date				. <del></del>
<u>Parameter</u>	Units	Allied Paper		Upjohn Bishop 3/9	Georgia Pacifi 3/9	Method c Blank		
Aroclor 1221	ug/l	<0.02	< 4	⟨0.2	X=<0.04 ₹=<0.04	, <0.04		
Aroclor 1242	ug/1	< 0.0₺	< 7	<0.02	1	<0.09		
Aroclor 1254	ug/l	<0.02	<0.08	<0.C7	<0.02 <0.02	2 <0.02		
Aroclor 1260	ug/l	< 0.02	< 0.06	<0.03	0.02 0.02 $\overline{X}$ = 0.03	2 <0.03		1
Total PCB's	ug/l	<0.1	< 11	<0.3	< 0.1	<0.2		
				-		-	-	2 5.2
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#### Industrial Waste Inspection

#### Georgia Pacific Corporation

Georgia Pacific Corporation Inspected by: J. Ward 2425 King Highway

C. Longcore

Kalamazoo, MI 49001 Dates: June 30, 1987 Telephone: (616) 382-2890 July 15, 1987

Company Represenative: Alan Campbell

#### General Information:

Nature of Business - Georgia Pacific-Kalamazoo is a division of

nas an SIC code number of 2621.

Description of Process - This facility produces lightweight printing papers and other specialty papers on two modern Foundrinier paper machines operated at approximately 2,000 -2,500 feet per minute. The mill uses bleached Kraft pulps and some recycled paper stock with phenolic resins, latex sizing, clave alum, and fillers added as needed. Small amounts of direct are also used for paper tinting. All materials from outside sources and according to the company processing or de-inking operations.

Description of Process process process was seen.

then pumped to a clarifier for pretreatment before being discharged to the City industrial sewer. city water is used for air conditioning chillers and non-contact cooling for air compressor and is then diverted for use as process water. Referring to the following Process Flow Diagram, flows originate at four main production units. These are: mill #8, mill #3, sand filter plant, and power plant. Process flows from mill #1 and mill #3 are the normal process waste from a fourdriner papermaking unit. This would include excesswhite water containing all the chemicals noted in Description of Process previously, as well as vacuum pump felt water, excess starch, or the infrequent dumping of machine chests etc. The power plant discharges primarily boiler. blowdown. The sand filter plant discharge from 100,000 to 200,000 gallons per day of sand filter backwash.

Process Flow Diagram

Boiler Blowdown Power Plant Excess white water From Foundamen uncl Voum pump felt water mill 77 # 3 Charifier Effluent main Charifier Sump Filler 2001.00 TO CITY SEWER INTercepr Sand Filter Plant Back Was H STaT.ON mill Excess Wacumn Pump Felt Water Fourdringer # 1 Solids From . Charfier underflow Press to handfill unit

Kalamazoo River

Water Supply and Consumption - 3.5 million gallons per day of Kalamazoo River water is used for process supply, 6.0 million is used for turbine cooling. In addition, an average of 6,000 m3 of the City of Kalamazoo Municipal water is consumed monthly. A 100 gpm private well is also in use in the filter press building only. City water is used for domestic potable consumption, as well as, air conditioning chillers and non-contact cooling water for air compressors and is discharged into the plant waste-stream or is used for process. The river water is sand-filtered, chlorinated and used in the following percentages - 30 % make up water of which 10 % is lost to boiler blowdown and 20 % goes into product, 70 % is used for non-contact cooling water for the facilities electric turbine cooling needs and then returned to the river. Also 100,000 to 200,000 gallons per day of sand filter backwash from the river intake treatment plant is discharged into the facilities waste stream.

Type of Wastewater - Company representative estimates 99 % of wastewater discharged is process and 1% is sanitary. These figures should be revised. The company does combine cooling, filter backwash, boiler - blowdown and some runoff from roof drains. Exact percentages could not be determined at the time of the inspection.

Volumes of Discharge - Georgia Pacific discharges a daily average of 13,500 m3. Flow is monitored at the metering station operated and maintained by City Personnel. A flow summary including solids and BOD loadings follows. This data was formulated from the daily monitoring activities.

1986	Ţ	FLOW (M <sup>3</sup> )	<del>,                                     </del>	II SUS	PENDED SO	LIDS	BOD				
MONTE	DATLY AVERAGE	HIGHEST PLOW/ MONTH	LOWEST FLOW/ MONTH	DAILY   AVERAGE   CONCEN.   (MG/L )	HIGHEST CONCEN. FOR THE MONTH	DAILY AVERAGE LOADING (KGS)	DATLY   AVERAGE   CONCEN.   (MG/L)	HIGHEST CONCEN. FOR THE MONTH	DAILY AVERAGI LOADIN (KGS)		
JAN.	13,075	1/ 1/5/	10,043		120(20		1 249	490 (20)			
FEB.	12,977	-¦ <del></del>	9004	86	356	1113	278	635(2)	3614		
MARCH	14,031	19, 585	11010	61	136 (4)	859	262	393 (9)	3,67		
APRIL		-i	10,658(12)	51	132(29)	669	233	350 (12)	3,06:		
MAY	13,062	-	11,456(10)	: :	108(27)	585	304	> (7)	34,2		
JUNE	13,137	· i · · · · · · · · · · · · · · · · · ·	·	i i	254(2)	705	290	405 (1)	35° i		
JULY	14,72,8	(22)	2600(4)	44	126(17)	620	234	460 (22)	3284		
AUG.	12,9:	15,3-3 171	12542(29)	3/	84(28)	403	240	365(3)	3103		
SEPT.	12,739	16,682(7)	9835(10)	36	86(8)	456	248	380(20)	3154		
oct.	13,203	19,571(4)	8349(28)	44	106 (2)	576	257	510 (27)	3400		
NOV.	12 73	15,755 (12)	7938(1)	41	112(11)	528	310	770(7)	3952		
DEC.	13,415	21,434(7)	5110 (25)	50	136 (24)	671	283	690(16)	3800		
1987											
JAN.	13,254	19,260(8)	9932(4)	50	126(22)	665	301	720(2)	3989		
EB.	15.529	15904951	101616	40	164(1)	503	287	44000	31,00		
IARCH	14187	19075(ð)	1085460)	46	1440(17)	457	282	350(15)	3999		
PRIL	13292	<u>19305(2)</u>	9169 (16)	63	98 (34)	843	251	310(28)	3341		
AY	13352	17108 (n)	8245(24)	59	312(23)	788	325	490 (9)	4338		
UNB	14.551	21943 (14)	10933(24)	49	158 (12)	709	354	700(4)	5140		
ULY	14671	<u> 18975 (2)</u>	7150(4)	57p"	196 (4)	823	293	400 (5)	4299		
JG.	14745	18831(12)	11107(29)	43	142 (26)	1,39	240	422(63)	3544		
EPT.	15036	31074(11)	11938 (18)	37	158 (15)	<i>5</i> 5/	268	400(3)	4028		
CT. /	15190	21900 (2)	12007(9)	61···	420 (22)	927	241	352 (24)	3459		
ov.		a0700 (±1)		95	2108 (18)	1600	316	415(18)	5293		
ec.					** * ·			,			

<u>Drains - roof, parking lots, infiltration - The estimated area or volumes of this source could not be determined at the time of this inspection:</u>

#### Critical Materials List Chemicals:

Inorganic Acids
PCB
Hypochlorite
Organic Acids
Chlorine
Pentachloraphenol
Ashestos

#### Additional Critical Materials from KWRP Analysis:

Chromium Cyanide

#### Disposal Practices:

Disposal of Spent Chemicals and Volumes - Approximately 120 gallons per month of paint waste and cleaning solvents are collected and under contract are removed by Safety Clean Inc. to be recycled. Crankcase and motor oils are also collected and recycled by waste oil dealer.

Disposal of Spoilage and Volume - Off specification paper is recycled as pulp back into process. Additional batch discharges from machine chests, starch makeup tanks, etc. could occur as product run specifications are changed. In addition a number of drums of \*\*\* - formaldehyde wet strength resin was drained at the rate of one drum per day into the sanitary sewer during a period in mid-November 1987. This procedure was noted as an improper discharge by KWRP personnel and other methods for disposal are being investigated by the facility.

Disposal of Precipitates and Sludges - Filter cake is land filled on company property. Fly ash from coal boiler system is hauled by waste hauler and land filled.

#### Name and License Number of Waste Hauler:

Drug and Lab Disposal	MID	092947928
Safety Clean	IND	0000715474
Environmental Waste Control Inc.	MID	057002602
SCA Chemical Services Inc.	ILD	0000672121
Rollens Environmental Services	TXD	055141378

Pretreatment Techniques - The plant effluent is pumped into a 203,376 ft3 clarifier for primary settling. Clarifier effluent passes on through a sampling and metering station before entering the City industrial sewer. Sludge removed from the clarifier is pumped to a thickener. Polymer is added to the thickened sludge just before the two(2) filter presses to improve the dewatering and "cake" handling process. The "cake" is then landfilled. There is a 24" bypass line which dumps into the clarifier's outside effluent ring. All bypass wastewater is sampled and metered.

Air Emission Control Equipment With A Wastewater Discharge - There is no equipment of this nature on site.

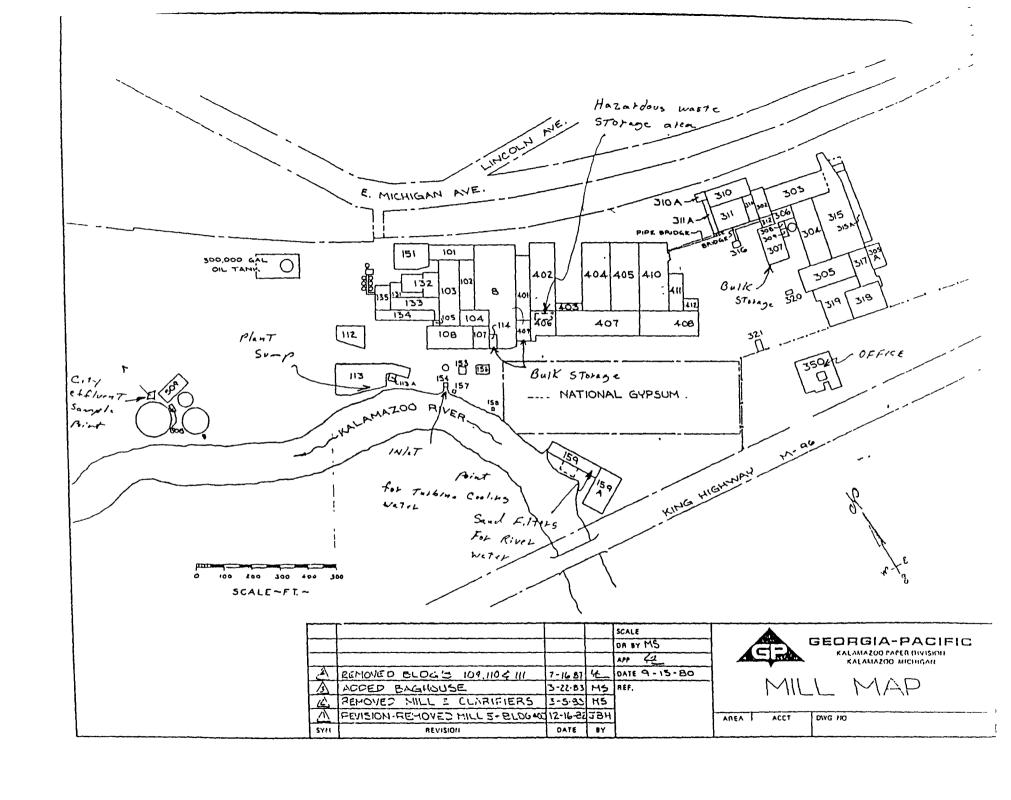
#### Spill Prevention:

Bulk Material Stored On Site, Location of Storage and Volume - (See following summary)

### ATTACHMENT #1

## Bulk Materials Storage List

material	Volume	Location Building #
#6 Fuel Oil	500,000 gallons	West of 151
Sodium Hydroxide 50 %	24,000 gallons	314
Sodium Hydroxide 50 %	12,500 gallons	114
Aluminum Sulfate 36 Be	12,000 gallons	114
Aluminum Sulfate 36 Be	12,000 gallons	3 07
Aluminum Sulfate 36 Be	12,000 gallons	114
Sodium Hypochlorite 756	18,000 gallons	108
Sodium Aluminate 791	12,000 gallons	307
Neuphor (synthetic resin)	13,600 gallons	4 09
Neuphor (synthetic resin)	12,000 gallons	307
Latex 50 % 7 23	24,000 gallons	307
Clay 70 % _ 2-4	90,500 gallons	114 .
Clay 70 %	85,000 gallons	307
Fluorescent Dye	5,000 gallons	409
Starch \	100 tons	outside 401
Starch 29	100 tons	304
Chlorine 738 500	12-1 ton cylinder	159
Phenolic Resin 725	12,000 gallons	304
Titanium Dioxide 7 36	29,000 gallons	302
Gasoline 727	10,000 gallons	south of 50
Diesel Fuel	12,000 gallons	west of 321
Kerosene <	5,000 gallons	134
#6 Fuel Oil $7/5$	12,000 gallons	134
Alum	7,200 gallons	159



Secondary Conta ent - There is no secor ry containment for either bulk storage of chemicals in the mill, power plant, and filter building or for processes. This is due to the nature of open floor drains and process channels throughout the facility and the absense of 150 % volume containment impoundments around bulk material tanks. Process spills or bulk storage spills would enter the sanitary system directly through process lines or floor drains.

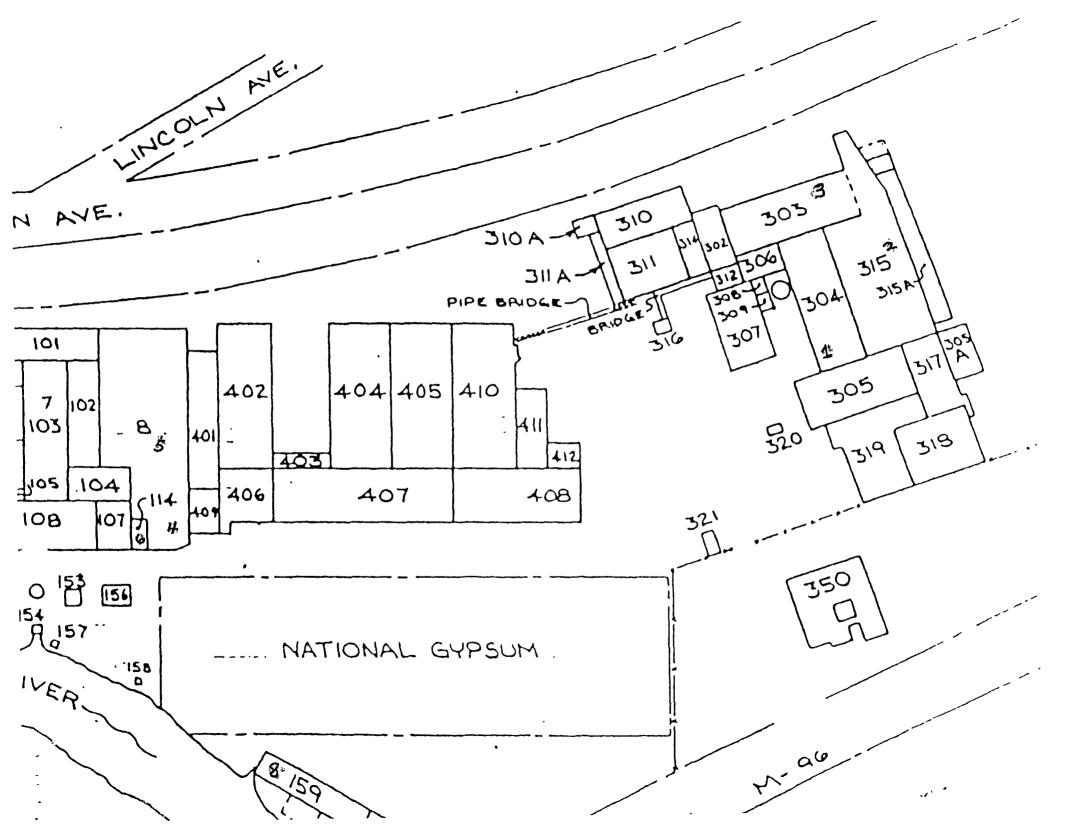
Storage of Hazardous Reaction Materials - There is currently no separte storage of materials that could produce a hazardous reaction. Of particular concern is the storage of aluminum sulfate and sodium hydroxide in Building #114.

Spill Prevention Plans - The facility has a company sponsored Hazardous Waste Management Plan. A copy is enclosed. Of concern to the KWRP is that no provision is made for the immediate notification of KWRP personnel in the event of a spill. Given the large volumes of potential spill materials that could upset the plant, especially latex, and sodium hydroxide, and the short travel time, this issue should be dealt with.

#### Sampling and Analysis:

Process and Outfall Summary - The different processes contributing to the combined wastestream sampled at the clarifier metering station are as follows: Paper making operations in mill #3 and mill #1, Boiler blowdown, sand filter plant backwash. all process outfalls have a suitable sampling point. The location of these process discharge points are noted below:

- #1 Mill #3 final effluent; basement of building #304
- #2 Felt-press water discharge; basement of building #315 papermaking machine #3
- #3 White water overflow discharge; basement of building #303 papermaking machine #3
- #4 Mill #1 final effluent; basement of building #88
- #5 Felt-press water discharge; basement of building #8 papermaking machine #8
- #6 White water overflow discharge; basement of building #114
- #7 Boiler blowdown power plant effluent; basement of building #103



Company's Sampling Program - Company keeps a split sample from KWRP metering station and performs BOD and solids daily on clarifier effluent. Sludge sample analysis are run on a quarterly basis.

- 1. Repeated attempts to obtain the following information from the company have been unsucessful.
  - 1. Material Safety Data Sheets for latex sizing, settling sizing, phenolic resin, dyes, boiler chemical and water treatment biocides.
  - 2. Area of roof and parking lot drainage to sanitary sewer.
  - 3. The source of cyanide detected in samples of the wastewater effluent.
- 2. It should be noted that Georgia Pacific has the capacity to bypass their clarifier and discharge untreated paper wastes directly to the treatment plant. Without the availability of a "return line" such as provided for at James River, the potential for KWRP upset as the result of equipment failure at Gerogia Pacific's clarifier is very high.
- 3. Large bulk quantites of phenolic resin and latex sizing in addition to the 36,500 gallons of 50 % NaOH solution poise a large potential for spill upset to the KWRP. It should also be noticed that the spill containment provisions of the facility's. Hazardous Waste Management Plan does not include notification of KWRP of a spill nor is it evident that the realization of the impact spills of the above materials would have on the KWRP have been conveyed to operational personnel.
- 4. Following the notice of an advertisement in the Kalamazoo Gazette for a "Deinking Supervisor", it should be determined if a deinking operation is envisioned in the future.
- 5. In Building #114, the bulk storage tanks for aluminum sulfate and soduim hydroxide are not separated and could cause a hazardous reaction if one came into contact with the other.

DO	NOT	WRITE	IN	THIS	SPACE
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Failure to file is pun-shable under section 299,548 MCL or Section 10 of Act 136, P.A. 1969.

Terfalleb an Ended and Acting Fla. 1969.

	OF NATURAL RESOURCES	ATT.	DIS. 🗆	REJ. 🗌	PR. 🗆	1		
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	3. Generator's Name and Mailing Address Georgia Pacific	1 - 1 - 1 - 1		<u> </u>		anifest Docum	ent Number	
	2425 King Highery, Kalenazoo,	MT 4960			MI	25570	03	
	616 382-2890 4. Generator's Phone (	<b>→</b>			B. State G	enerator's ID		
	5. Transporter 1 Company Name	6.	US EPA ID N	umber	C. State Tr	ansporter's ID	TT 423	23 /
	UNISON Private Truck Fleet		[D   9   8   1   0   9				614/275-	
	7. Transporter 2 Company Name	8.	US EPA ID N	umber		ansporter's ID	4 - 4 - 4 - 5 - 5	·
	9. Designated Facility Name and Site Address	10.	US ERAID N		<u> </u>	ter's Phone		<u> </u>
	ENSR Operations 4160 Perimeter Drive	10. j	US EPA ID N	umber	G. State F	icility's ID		
	Columbus, CH 43228	PH	0 9 3 1 9 6	0 1 2 3	H. Facility	75-4100		
	11. US DOT Description (including Proper Shippi HM ID NUMBER).	ing Name, Ha	zard Class, and	12.Cont No.	1 1	13. 14. Unit	1. Waste No.	N/!
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0	X ORM-E, NA9188 (Polychlori	inated Bi	phenyls)		TES.	K	026 L	, 14
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lΓ	15. Special Handling Instructions and Additional	Information ?	Ul weights a	re estim	ated. E	mergency F	lesponse	<u> </u>
1	1-800-759-3677 or 216-452-0837	See Cor	itimuation Sh	cet			ekwî di ji ji ji	- ,÷.
	16. GENERATOR'S CERTIFICATION: I hereby declare that the proper shipping name and are classified, packed, marked, according to applicable international and national government.	and labeled, and ent regulations,	are in all respects in p	roper condition	described above for transport by	by highway		• • • · ·
	If I am a large quantity generator -1 certify that I have a	program in plac	e to reduce the volum	e and toxicity o	of waste genera	sted to the degree	e I have detem	nined
	to be economically practicable and that I have selected present and future threat to human health and the environment.	vironment: OR: i	if I am a small quantity	generator, I h	ave made a qo	available to me vood faith effort to	vnich minimize minimize my v	waste
	generation and select the best waste management i	method that is	available to me and	that I can affe	ora.		Date	<del></del> -
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ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE

EPA Form 8700-22 (Rev. 9/88)

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Failure to file is punishable under section 299.548 MCL or Section 10 of Act 136. P.A. 1969.

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TRANSPORTER

FACILITY

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1979 as amended and Act 136 PA 1969

Failure to file is punishable under section 299 548 MCL or Section 10 of Act 136 PA 1969

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# # MICHIGAN DEPARTMENT OF NATURAL RESOURCES

ALL SPILLS MUST BE REPORTED TO THE MICHIGAN POLLUTION EMERGENCY ALERTING SYSTEM, IN MICHIGAN AT 1-800-292-4706 OR OUT OF STATE AT 517-373-7660 AND THE NATIONAL RESPONSE.
CENTER AT 1 800 424 8802 24 HOURS PER DAY

TRANSPORTER

EPA Form 8700-22 (Rev 9/88)

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# DNR MICHIGAN DEPARTMENT OF NATURAL RESOURCES

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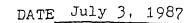
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-	20 50	cility Owner or Operator Certification o	f receipt of har	ardous mater	ials covered	by this mai	nifest	except a	s noted	in			
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# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031.

## DATA SUMMARY SHEET

Sample Name/Date

Damps. o Tramb, La to											
			Upjohn- Bishop	KWRP Final E	Allied f.Paper	Georgia Pacific	James River	Field Blank			
<u>Parameter</u>	Units		6/24	6/24	6/24	6/24	6/24	6/24			
Aroclor 1221	ug/l		<0.08	₹0.01	< 0.09	<0.05	∠0.06	< 0.01			
A100101 1221	ug/ I		V 0.00	2 0.01	1 0.09	(0.03	20.00	0.01			
Aroclor 1242	ug/l		∠0.05	< 0.01	< 0.05	< 0.03	< 0.03	< 0.01			
Aroclor 1254	ug/l		0.05	< 0.01	<0.03	0.03	< 0.03	<0.01			
Aroclor 1260	ug/l		0.03	< 0.01	<0.03	< 0.03	< 0.04	· 0.01			
Total PCB's	ug/l		0.05	< 0.04	< 0.20	0.03	< 0.16	< 0.04			
	<u> </u>										



# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031

### DATA SUMMARY SHEET

Sample Name/Date

bampie Name/Dave											
		Allied Paper	James River	Bishop	Georgia Pacifi	Method c Blank					
Parameter	<u>Units</u>	3/9	3/9	3/9	3/9						
Aroclor 1221	ug/l	<0.02	< 4	<0.2		4 <0.04					
Aroclor 1242	ug/l	<0.04	< 7	<0.02	<0.07 <0.06	₹ <0.09					
Aroclor 1254	ug/l	<0.02	<0.08	4.0.04	<0.02 <0.02 X=<0.0	2 <0.02					
Aroclor 1260	ug/l	<0.02	< 0.06	<b>&lt;</b> 0.03	$ \begin{array}{c} 0.02 \\ 0.02 \\ \overline{X} = 0.02 \end{array} $	2 <0.02					
Total PCB's	ug/l	<0.1	< 11	<0.3	< 0.1	<0.2	*****				
			·								
			_								



DATE January 8, 1988

# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031

DATA SUMMARY SHEET

page 1 of 2

PARAMETER	UNITS	Blank 33687	Allied Paper	River	Georgia Pacific 12/2/87	34387	Inmont	Upjohn
IAMAMILIA	UNIIS	12/2/0	12/2/87	12/2/07	12/2/87	12/9/07	12/9/87	12/9/07
Aroclor 1221	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.0l
Aroclor 1242	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01
Aroclor 1254	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01
Aroclor 1260	ug/l	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Total PCB's	ug/l	< 0.05	< 0.05	< 0.04	<0.05	< 0.05	<0.05	< 0.05
<u></u>						<u> </u>		l



# SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239	
Tag:	James River Clarifier 7:50 A.M.	Georgia Pacific Clarifier GEO 11688 10:30 A.M.	inmont I <b>NM</b> 11788	
	04/25/88	04/25/88	04/26/88	
PCB-1016, ug/L	<0.1	<0.1	<0.1	
PCB-1221, ug/L	<0.1	<0.1	<0.1	
PCB-1232, ug/L	<0.1	<0.1	<0.1	
PCB-1242, ug/L	<0.1	<0.1	<0.1	
PCB-1248, ug/L	<0.1	<0.1	<0.1	
PCB-1254, ug/L	<0.1	<0.1	<0.1	
PCB-1260, ug/L	<0.1	<0.1	<0.1	

SEG Number:	75240	75241
Tag:	Allied Paper Clarifier APC 11788 04/26/88	Upjohn Bishop Rd. UJB11788 04/26/88
PCB-1016, ug/L	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1

Approved by Lori A. Vachon

( MA TACITIC - VEIR TIC

City of Kalamazoo Analytical Results Continued Attn: Dr. Nasim Ansari August 25, 1988 Page Two

1 \_

SEG Number:	77257
Tag:	Georgia Pacific #GEO 20088 10:55 A.M. 7/18/88
PCB - 1016, ug/L	<0.1
PCB - 1221, ug/L	<0.1
PCB - 1232, ug/L	<0.1
PCB - 1242, ug/L	<0.1
PCB - 1248, ug/L	<0.1
PCB - 1254, ug/L	<0.1
PCB - 1260, ug/L	<0.1

Approved by Josi J. Jachon

LAV/jp

parameter	VALUE		<u>-</u>	Units	Sample Date	Sample Type	Sample Time
NICKEL		0.000 0.000 0.000 11.000 7.300 6.500 9.500 0.000 0.000	*	ug/l ug/l ug/l ug/l ug/l ug/l ug/l	01/17/89 01/18/89 01/19/89 01/20/89 04/04/89 04/05/89 04/06/89 04/07/89 07/18/89 07/19/89 07/20/89 07/21/89	24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP 24 HR COMP	10:45 AM 10:50 AM 11:00 AM 10:40 AM 11:10 AM 11:20 AM 11:20 AM 11:20 AM 11:00 AM
Mean parameter	VALUE	3.358	_	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE		383.000 590.000 8.760 9.180 11.400 17.600 6.630 8.440 5.000 3.000	-	mg/l mg/l mg/l mg/l mg/l mg/l mg/l mg/l	01/05/88 01/07/88 01/17/89 01/19/89 04/04/89 04/05/88 04/07/88 07/18/89 07/19/88 07/19/88	GRAB GRAB 24 HR COMP 24 HR COMP GRAB GRAB GRAB GRAB GRAB GRAB GRAB GRAB	11:30 AM 11:40 AM 10:45 AM 11:00 AM 11:10 AM 11:15 AM 11:15 AM 11:15 AM 11:10 AM 10:45 AM 10:45 AM
Mean	1	86.001			Sample		Sample
parameter	VALUE		-	Units	Date	Sample Type	Time
PCB's Mean		0.000	*	ug/1	Ø4/25/88	GRAB	10:30 AM
parameter	VALUE		_	Units	Sample Date	Sample Type	Sample Time
indicates test results	<b>ക</b> ി വ	0.750 0.620 0.850 0.000 0.000 0.000 0.000	* * * * * * * * *	ug/l ug/l ug/l ug/l ug/l ug/l ug/l ug/l	01/05/88 01/06/88 01/07/88 01/08/88 01/17/89 01/18/89 01/19/89 01/20/89 04/05/88 04/06/88 04/07/88		11:30 AM 11:00 AM 11:40 AM 11:40 AM 10:45 AM 10:50 AM 11:00 AM 11:00 AM 11:30 AM 11:30 AM 11:30 AM 11:15 AM 11:00 AM



GEO Heargin Pacific

Analytical Laboratory Report

City of Kalamazoo

FECL #: 6726-91-E1-8 May 23, 1991

Page Three

FECL #: 6726-91-E1 6652-91-E2

Tag: Upjohn-Bishop Rd. James River MET STA

UJB 11391 JRC 11391

Organic

Organic .

PCB <0.0001 mg/l <0.0001 mg/l

 FECL #:
 6726-91-E3
 6652-91-E3

 Tag:
 Georgia Pacific
 Parchment

 GEO 11391
 PAR 11391

3.23

PCB <0.0001 mg/l <0.0001 mg/l

 FECL #:
 6726-91-E5
 6652-91-E6

 Tag:
 Meredith Rd.
 Portage Creek

 MRD 11391
 POR 11391

Organic

PCB <0.0001 mg/l <0.0001 mg/l



Analytical Laboratory Report

City of Kalamazoo

FECL #: 6726-91-E1-8

May 23, 1991 Page Four

FECL #: Tag: 6726-91-E7 Gull Lake GLS 11391 6652-91-E8 Vicksburg VIC 11391

Organic

PCB

<0.0001 mg/l

< 0.0001 mg/l

V.F. Mushakpp

Violetta F. Murshak Laboratory Manager

VFM/mbb

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES No 7485 PURPOSE OF ANALYSIS: SAMPLERS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 616-385-8157 E/TIME DATE/TIME С G SAMPLE LOCATION, DESCRIPTION **ITEM** SAMPLE NUMBER & SIZE 0 R SAMPLE I.D. NUMBER NUMBER OF CONTAINER М М Α & REMARKS METER UZB Bishop Brown wo-514 3RC RECEIVED BY: (Signature) κ̈ PcB's Cloud RECEIVED ( (Signature) METER STA METER E/TIME DATE/TIME METER Brow DAJ MEILR Cloud ΒŸ Æ METER 3 RELINQUISHED E (Signature) 4 | RELINQUISHED E | (Signature) C 139 1wo-DATE/TIME DATE/TIME RESULT TRACE METALS ORGANIC COMPOUNDS RESULT GENERAL/CONVENTIONAL RESULT mech. gral CADMIUM **EPA METHOD 601** рΗ BOD TOTAL CHROMIUM HEX. CHROME CBOD too RECEIVED I RECEIVED I (Signature) COD COPPER ر م LEAD TSS NICKEL S VSS Bishop ZINC EPA METHOD 602 NH<sub>3</sub>-N DATE/TIME TOTAL P SILVER PCB'S flow ORTHO P MERCURY GREASE/OIL **BERYLLIUM** Upjohn ₽. ₽ because CHLORIDE BARIUM 2 RELINQUISHED E (Signature) REMARKS: ELINQUISHED CN - TOTAL 9 CN - AMENABLE OTHER

#### ANALYTICAL RESULTS

To: Georgia Pacific Corporation Project No: 912897

Report Date: 1/07/92

Project Desc.: Analysis of one wastewater discharge. '

Sample No.:912897-01 Sample type: aqueous Received on: 12/19/91

ID: "Clarifier Effluent Grab, 12/19/91, 10:30"

PH 6.7 S.U. PCB, total <0.1 ug/L Cyanide, total 0.02 mg/L

Sample No.:912897-02 Sample type: aqueous Received on: 12/19/91

ID: "Clarifier Effluent 24hr Composite, 12/19/91"

 Cadmium, total
 <0.005 mg/L</td>

 Chromium, total
 <0.01 mg/L</td>

 Copper, total
 0.02 mg/L

 Lead, total
 <0.002 mg/L</td>

 Mercury, total
 <0.0005 mg/L</td>

 Nickel, total
 <0.02 mg/L</td>

 Zinc, total
 0.16 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

# NON-DOMESTIC USER SURVEY FORM

I.	GENERAL	INFORMAT	ION

1.

2.

3.

4.

5.

Peter Eckrich & Sons, Inc.	Peter Eckrich & Sons, Inc.
Corporate Name	Plant Name
P. O. Box 388 Hobson Road	631 Second Street
Address - Street and Number	Address - Street and Number
Fort Wayne, Indiana 46801	Kalamazoo, Michigan 49007
City Zip Code	City Zip Code
	(616) 381-4114 Plant Phone Number
Dalama Mara Diana Mara	
Robert Huffman, Mgr. Plant Med Name and Title of Person Completing	
Hame and Tree of Terson compreting	Report Thore Rumber
	stionnaire is familiar to me and to the best $r$ mation is true, complete and accurate.
12-9-81 Jump	Plant Manager
Date Signature of Re	sponsible Official Title
Kenneth R. W	
Print or Type Na	me of Responsible Official
Nature of business: Meat Proces	sing
2 0 (1 (0) Othe	**************************************
Write the appropriate Standard Indust	rial Code (SIC) in the box above.
What types of waste(s) do you dischar	ge to the sanitary sewer?
A. $(x)$ Sanitary B. $(x)$	Wash Water C. $(x)$ Rinse Waters
D. $(X)$ Cooling Water E. $(X)$	Process Waters F. (X) Scrubber Waters
G. () Other	
Do you use, store or discharge any ac	ids, bases or materials listed in Table I?
A. (X)Yes B. No	
Does the operation of your processes in a residual residue or sludge type	or wastewater treatment facility result waste?
A. (X)Yes B. (No	

	1.	Identify outfalls (circle):
	,	A. Surface waters. Name of receiving waters:  B. Septic tank-file field. C. Surface of ground. Municipal sanitary sewer. Storm sewer. F. Other, describe (include line drawing(s) of process flows and all floor drain discharging to each outfall)
	2.	Volumes of discharge: A. Average Daily Flow: 190,000 gallon per day B. Maximum Daily Flow: 260,000 gallon per day C. Flow is: Measured X Estimated
	3.	Type of wastewater:
		A. % Process 91 B. % Cooling 8 C. % Sanitary 1 D. % Other
	4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?
		A. $\bigcirc$ Yes B. $\bigcirc$ No If yes, estimate area drained $\_$ sq. ft.
I۷.	DIS	POSAL PRACTICES (add extra pages if necessary)
	1.	How do you dispose of spent chemicals (explain)? N/A
	2.	A. Volume Disposed of: How do you dispose of spoilage (explain)? Rendering Company purchases and removes material from plant.
	3.	How do you dispose of precipitates and/or sludges (explain)? Removed  by licensed industrial waste hauler.  A. Volume Disposed of: 26 Tons/year
	4.	Name of waste hauler: Waste Management of license No. K.CO. 12253
		Do you have pretreatment for your wastes? A. (X)Yes B. (No
		If box A is checked: Type: Grease skimmer and shaker screen  Size: 25,000 gal. tank  Frequency of Operation: 24 hours/day
		If box B is checked, where and how are the wastes disposed of?
		To sanitary sewer ()  To storm sewer ()
		Industrial Waste Hauler Other
		If other, explain N/A

- 3 -

#### VII. MISCELLANEOUS

1.	Describe any safety precautions to be observed by those visiting at your site:		
	Safety shoes	befitting slippery floors.	
	Note: Sanit	ary precautions are numerous, hairnets, no	
		ng/eating of gum, candy, food, no watches or	
	jewel	ery.	
2.	Contact Person:	Name Robert Huffman	
		Title Mgr. Plant Mechanical Services	
	7	Phone Number (616) 381-4114	

#### NON-DOMESTIC USER SURVEY FORM

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

## ATTACHMENT

II.

2. 158 (Sodium) Hypochlorite, used as sanitizer on equipment. 167 (Inorganic) acids, used in cleaning and/or rinse of equipment after caustic wash. 169 Chlorine (approx. 2%) used in chlorinated cleaners for sanitation (cleaning) and occasionally used as one shot sanitizer of water tank to disinfect. 127. Polychlorinated Biphenyls (P.C.B.) in electrical equipment (contained) No number: Sodium Hydroxide used in caustic cleaners for equipment.

## V. SPILL PREVENTION

1.	Material	Sodium Hypochlorite	volume:	250	Gal.	Location:	Dry Storage
	11	Acids	11	500	Gal.	11	Dry Storage
	U	Chlorinated Cleaners	n	1350	Gal.	11	Dry Storage
	"	Caustic Cleane Sod. Hydroxide		3600	Gal.	11	Dry Storage

RH/vr

January 17, 1978

Mr. Norbert Gerard Plant Mechanical Service Hanager Peter Eckrich & Sons 631 2nd Street Kalamazoo, MI 49006

Re: Pollution Incident Prevnetion Plan

Peter Eckrich & Sons 23228

PCB Addendum

Dear Mr. Serard:

We have completed our review of your Pollution Incident Prevention Plan pertaining to Polychlorinated Biphenyls (PCB) submitted in accordance with Rule R 323.1162 of Part 5 of the Water Resources Commission Administrative Rules: Spillage of Oil and Polluting Materials.

The plan, which we have determined meets the requirements of the Rules, is approved. If the plan has not already been fully implemented, you should not delay placing into effect the required procedures and undertaking the proposed and necessary construction of all facilities to provide adequate loss containment areas and to prevent pollution of the waters of the state as required by law.

We would remind you that any changes in present conditions or operations at your establishment may require modification of the plan with additional construction and should be reported to this office.

You are further required to notify us immediately of any spill and to file within ten days after the incident a report describing the cause and extent of the loss, the material involved and corrective measures taken.

Very truly yours,

WATER RESOURCES COMMISSION

Robert J. Courchaine Executive Secretary

RJC/RWP:clp

cc: K. Zollner

- C. Harvey
- P. Blakeslee
- R. Parker

City of Kalamazoo

DEPT. PUBLIC WORKS

FEB 3 1978

RECEIVED CITY OF KALAMAZOO

August 17, 1977

Mr. Morbert Gerard Plant Mechanical Service Hanager Pter Eckrich & Sons 631 Second Street Kalemazoo, MI 49006

> Re: Pollution Incident Prevention Plan Peter Eckrich & Sons 23228 PC3 PCB Addendum

Dear Mr. Gerard:

We hereby acknowledge receipt of the PCB Addendum to your pollution incident prevention plan submitted in accordance with the Rule E 323.1162 of Part 5 of the Water Resources Commission Administrative Rules.

It has been assigned to Mr. Chester Rarvey, our District Engineer, for review and recommended action. In accordance with the rules, if the plan is determined to be inadequate or incomplete, it will be returned to you for modifications. Upon receipt of a satisfactory plan, formal approval will be granted.

Should you wish to make further inquiry during the review of the plan, please contact Mr. Harvey at 616-363-4856, Grand Rapids, Michigan.

Very truly yours,

WATER RESOURCES CONTUSTION

Robert J. Courchaine Executive Secretary

RJC/RWP:clp

cc: K. Zollner

- C. Harvey
- P. Blakeslee
- R. Parker

City of Kalemazoo

Jed glad gr

# UNITED STATES E.P.A. - S.P.C.C. PLAN

(Spill Prevention, Control and Counter-Measure)

8

## MICHIGAN D.N.R. - P.I.P.P.

(Pollution Incident Prevention Plan)

## Distribution

Michigan D.N.R.

Manager Maintenance

Maintenance Foreman

Plant Manager

Central Engineering (Downers Grove)

DATE: January 8, 1991

TO: Michigan D.N.R.

Manager Maintenance Maintenance Foremen Central Engineering

FROM:

Jeff Hinkle

SUBJECT: REVISIONS TO E.P.A. - S.P.C.C. &

MICHIGAN D.N.R. P.I.P.P. PLAN

#### REVISIONS:

PLEASE CHANGE REVISED PAGES IN YOUR PLAN SO IT WILL BE CURRENT.

#### A. CONTENTS

PAGE 3 - - CHANGE OF NAMES AND TELEPHONE NUMBERS.

PAGE 3 - - CHANGE OF NAMES AND NOTIFICATION (POSTING).

PAGE 4 - - CHANGE IN CHECKING SCHEDULE TO DAILY.

PAGE 5 - - ELIMINATE THIS PAGE DUE TO INCREASING
THE AMOUNT OF SCHEDULED MEASUREMENT CHECKS.

## **EXPLANATION**

I. THIS PLAN FOR POLLUTION CONTROL OF SPECIFIC POLLUTANTS

IS PREPARED FOR SWIFT-ECKRICH, INC., KALAMAZOO,

MICHIGAN (FORMERLY PETER ECKRICH & SONS, INC., ALSO

BEATRICE MEATS, INC.).

THIS PLAN IS EXPECTED TO PROVIDE SUFFICIENT INFORMATION AND PROCEDURES TO SATISFY UNITED STATES E.P.A.S.P.C.C. PLAN, AND THE MICHIGAN D.N.R. - P.I.P.P.
PLAN.

THE PLAN AND FACILITY HAS BEEN REVIEWED BY JOHN
PRESSLER, P.E. HE ATTESTS THAT THE PLAN HAS BEEN
PREPARED IN ACCORDANCE WITH GOOD ENGINEERING
PRACTICES. HIS LETTER WILL BE KEPT ON FILE AT THE
PLANT SITE, AND FOLLOWS THIS PAGE.

THE E.P.A. - S.P.C.C. PLAN WILL BE KEPT ON FILE AT THE PLANT, AS A COPY IS NOT REQUIRED BY E.P.A. UNLESS RECENT SPILL OR IF REQUESTED.

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procedures for ammona	na.
receiver, not PCB transformer	<b>.</b>
5/12/03 SK	enii
	_

PETER ECKRICH AND SONS, INC. • P.O. BOX 388 • FORT WAYNE, INDIANA 46801 • PHONE (219) 481-2034

March 19, 1985

Mr. Robert Huffman Manager of Plant Engineering and Maintenance 631-45 Second Street Kalamazoo, Michigan 49007

Dear Bob:

I am in receipt of the <u>United States E.P.A. - S.P.C.C. plan and Michigan D.N.R. P.I.P.P.</u> and, as a result, have reviewed the following:

- 1. Oil Pollution Prevention Regulation, 40 CFR 112.1 112.7.
- 2. The drawings and specifications file for the installation of four 11,300 gallon oil storage tanks in the north parking lot of the Kalamazoo plant.
- 3. The SPCC plan and PIPP for the Kalamazoo plant.

I have examined the facility and have familiarized myself with 40 CFR 112.1 - 112.7, therefore I certify that the SPCC plan and PIPP have been prepared in accordance with good engineering practices and is satisfactory.

John Dee Pressler, PE

Principal Engineer, New Facilities

Indiana Registration #17815

JDP:rlt

## KNOWN MATERIALS OF CONCERN

II.

- A. FUEL OIL FOR BOILERS.
  - 1. STORAGE FACILITIES.
    - a. DAY TANKS IN BOILER ROOM (MAXIMUM CAPACITY 800 GALS.).
    - b. NORTH PARKING LOT -- 4 EACH -- 11,300 GALS.).

(MAXIMUM CAPACITY 45, 200 GALS.)

- B. P.C.B. TRANSFORMER REMOVED NOT LONGER A CONCERN.
- C. CAUSTIC CLEANER.
  - 1. STORAGE FACILITY FOR MAJOR CAUSTIC CLEANER, TANK.

(MAXIMUM CAPACITY 3,500 GALS.)

- 2. STORAGE FACILITY FOR SECONDARY CLEANERS, THREE TANKS AT 1,500 GALLONS EACH, MAXIMUM.
- D. AMMONIA.
  - RECEIVER TANK 5,000 LBS. (APPROXIMATE).
  - 2. SYSTEM 15,000 LBS. (APPROXIMATE).

(Rev. 01/09/91/E)

A. UNDER NORMAL CONDITIONS PEOPLE THAT SHOULD BE NOTIFIED TO DETERMINE IF AN EMERGENCY TRULY EXISTS:

			HOME PHONE	BUSINESS P
1.	CORPORATE ENGINEERING	TERRY BLESSING	312-680-0645	708-512-1
2.	MANAGER FLANT ENGINEERING & MAINTENANCE	TOM VER HAGE	616-665-9468	
3.	MAINTENANCE FOREMAN	BILL BALDWIN	616-329-0503	
		DARYL GANO	517-629-6781	
		LOREN GEROULD	616-649-1510	
4.	PLANT MANAGER	JEFF HINKLE	616-372-9322	
5.	Q.A. MANAGER	DWAIN LEASER	616-668-4848	•
6.	INDUSTRIAL RELATIONS — SAFETY MANAGER	ROBERT MORRIS	616-323-2674	

B. IF KNOWN SPILL OF POLLUTANTS HAS OCCURRED CONTACT THE FOLLOWING:

## UNITED STATES E.P.A.

NATIONAL	RESPONSE CENTER	800-424-8802
REGION V	EMERGENCY	312-353-2318

## MICHIGAN

MICHIGAN RESPONSE CENTER 800-292-4706

## MICHIGAN D.N.R.

LANSING 517-373-7660
PLAINWELL (LOCAL) 616-685-9886

## OTHER CONCERNED PARTIES

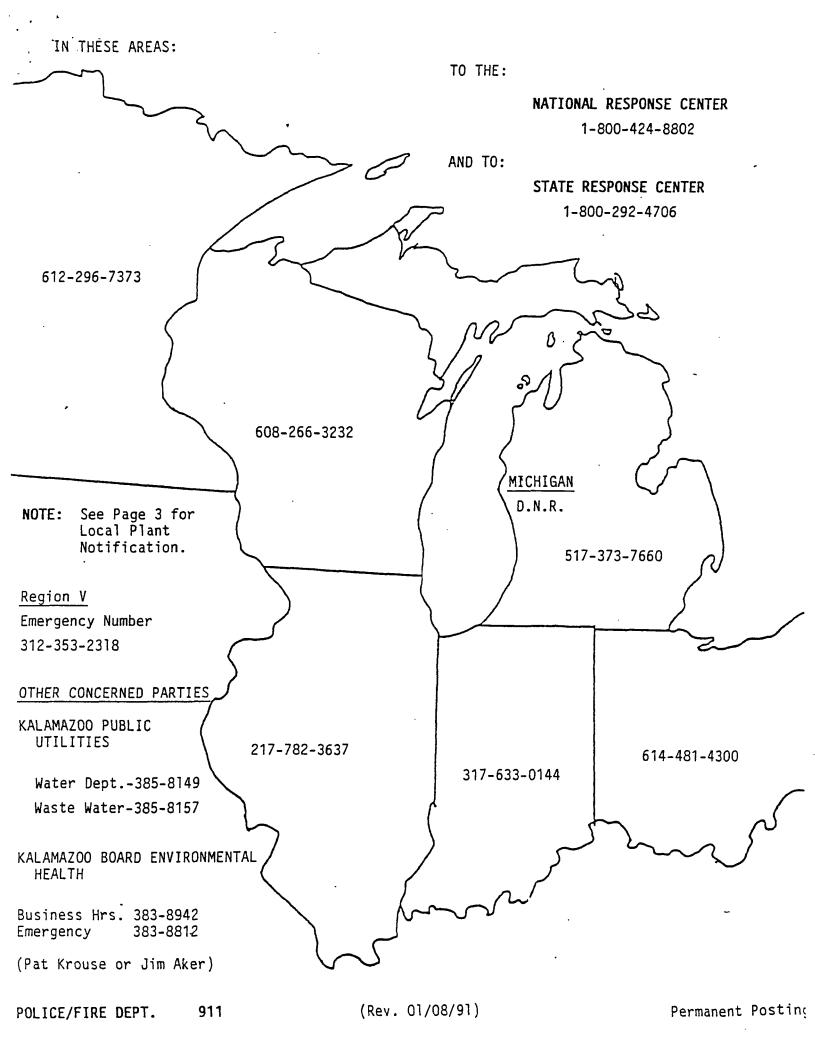
#### KALAMAZOO PUBLIC UTILITIES

-WATER -WASTE WATER	616-385-8149 616-385-8157	
KALAMAZOO CTY. ENVIRONMENTAL	616-383-8492	PAT KRAUSE
HEALTH OR EMERGENCY	616-383-8812	JIM AKER

FIRE/POLICE 911

## C. RECORDS OF NOTIFICATION.

IN ALL CASES ANY AGENCY THAT IS CONTACTED, THE PERSON MAKING THE CALL SHOL RECORD TIME, DATE, AND PERSON CONTACTED.



PLANT: 002 DF 'RTMENT: 620

EQUIPMENT INVENTORY NUMBER:

SERIAL NUMBER:

SUPPLIER:

GROUP NUMBER:

EQUIPMENT NAME: FUEL OIL TANKS - 4

LOCATION: BURIED - NORTH PARKING LOT

#### MAINTENANCE PROCEDURES

(KEEP M-4 RECORD MINIMUM OF 3 YEARS)

## SCHEDULE "D" (DAILY) --- NOT IN USE

1. MEASURE FUEL IN ALL TANKS WITH MEASURING TOOL/STICK AND RECORD ON MONTHLY SUMMARY SHEET.

NOTE: ANY GAIN OR LOSS DISCOVERED WHEN TANKS ARE NOT IN SERVICE MUST BE BROUGHT TO THE ATTENTION OF THE MANAGER OF PLANT ENGINEERING AND MAINTENANCE OR HIS ASSIGNEE.

## SCHEDULE "D" MONTHLY -- IN USE

- 1. MEASURING OF FUEL IN ALL TANKS WITH MEASURING TOOL/STICK WILL BE PERFORMED DAILY AND FIGURES PRESENTED TO PLANT INVENTORY MANAGER.
- 2. OBSERVE ALL FILTERS FOR ANY SAND/FOREIGN OBJECTS THAT MAY INDICATE TANK OR SUCTION LINE LEAKAGE.

NOTE: ANY UNUSUAL GAIN OR LOSS OF FUEL OR FOREIGN OBJECTS MUST BE BROUGHT TO THE ATTENTION OF THE MANAGER OF PLANT ENGINEERING AND MAINTENANCE OR HIS ASSIGNEE.

#### PERIODIC -- IN USE FILLING TANK

- 1. MEASURE FUEL LEVEL IN TANK TO INSURE REMAINING CAPACITY IS SUFFICIENT TO HOLD THE FULL CONTENTS OF THE TANKER.
- 2. AFTER FILLING CHECK CALIBRATION OF AUTOMATIC FUEL GAUGE IN BOILER ROOM WITH MEASURING TOOL/STICK.

(Rev. 01/08/91/G)

PLANT: 002 DEPARTMENT: 620

EQUIPMENT INVENTORY NUMBER: SERIAL NUMBER:

SUPPLIER: GROUP NUMBER:

EQUIPMENT NAME: CAUSTIC CLEANER MODEL NUMBER:

TANKS

1 - AT 3,500 GALLONS

3 - AT 1,500 GALLONS EACH

LOCATION: NORTHEAST CORNER OF WAREHOUSE

\_\_\_\_\_\_\_

## MAINTENANCE PROCEDURES

## SCHEDULE "E" (QUARTERLY)

- 1. INSPECT TANK FOR ANY SIGN OF LEAKAGE OR DAMAGE TO CYLINDER WALLS, GAUGES, OR VALVES.
- 2. INSPECT DIKE FOR ANY CRACKS OR SIGNS OF DAMAGE.
- 3. REPORT ANY DISCREPANCY IN TANK OR DIKE TO MANAGER PLANT ENGINEERING AND MAINTENANCE, MAINTENANCE FOREMAN, OR PLANT MANAGEMENT.

(Rev. 01/08/91/H)

PLANT: 002 DEPARTMENT: 620

EQUIPMENT INVENTORY NUMBER: SERIAL NUMBER:

SUPPLIER: GROUP NUMBER:

EQUIPMENT NAME: AMMONIA RECEIVER MODEL NUMBER:

LOCATION: AMMONIA RECEIVER

## MAINTENANCE PROCEDURES

## SCHEDULE "D" (MONTHLY).

- 1. INSPECT TANK, VALVES AND FITTINGS FOR ANY SIGN OF LEAKAGE.
- 2. INSPECT FENCE AND PADLOCK FOR PROPER MECHANICAL CONDITIONS.
- 3. REPORT ANY DISCREPANCIES IMMEDIATELY TO MANAGER PLANT ENGINEERING AND MAINTENANCE, MAINTENANCE FOREMAN, OR PLANT MANAGEMENT.

(Rev. 01/08/91/I)

PLANT: 002 DEPARTMENT: 620

EQUIPMENT INVENTORY NUMBER: SERIAL NUMBER:

SUPPLIER: GROUP NUMBER:

EQUIPMENT NAME: POSTING MODEL NUMBER:

REPORTING OIL OR CHEMICAL SPILLS AND MAINTAINING PLANS

LOCATION: SEE BELOW

## MAINTENANCE PROCEDURES

(KEEP M-4 RECORD MINIMUM OF 3 YEARS)

## SCHEDULE "F" (SEMI-ANNUAL)

- 1. CHECK THAT POSTINGS FOR "REPORT OIL OR CHEMICAL SPILLS" EXIST ON:
  - a. MAINTENANCE FOREMAN'S OFFICE.
  - b. MAINTENANCE DEPARTMENT BULLETIN BOARD.
  - c. BOILER ROOM OFFICE.
- 2. VERIFY THAT ALL TELEPHONE NUMBERS ARE CURRENT AND CORRECT ON POSTING.
- 3. VERIFY THAT S.P.C.C. AND P.I.P.P. PLANS ARE UP TO DATE AND ANY REVISIONS SUBMITTED TO THOSE ON DISTRIBUTION LIST.
- 4. THIS MAINTENANCE PROCEDURE CAN ONLY BE PERFORMED BY MANAGEMENT OF THE PLANT MAINTENANCE DEPARTMENT.

(Rev. 01/08/91/J)

## CONTRACTORS

## (EMERGENCY HELP)

V.

A. THE FOLLOWING CONTRACTORS ARE AVAILABLE TO HELP IN CASE OF EMERGENCY SPILLS OR LEAKS:

SERGEANT OIL CO. JIM WOODRUFF 616-343-1363

WILLIAM MORREN BUILDERS BILL MORREN 616-327-6763

C.L. MAHONEY CO., PLUMBING BILL WELLS 616-349-2676

> J.C. LEONARD CO. DAVE BRAMER 616-385-3840

(Rev. 01/08/91/K)

## VI. FACILITY LOCATION/DESCRIPTION

## A. MAIN PLANT

- 1. ADDRESS: 631 SECOND STREET, KALAMAZOO, MI, 49007
- 2. BOUNDARY

500 BLOCK SECOND STREET 500 BLOCK S. PITCHER 600 BLOCK E. WALNUT STREET

3. LONGITUDE

85 DEGREES - 35 MINUTES

4. LATITUDE

42 DEGREES - 17 MINUTES, 5 SECONDS

(Rev. 01/08/91/L)

UNITED STATES E.P.A. - S.P.C.C. PLAN (Spill Prevention, Control and Counter-Measure)

MICHIGAN D.N.R. - P.I.P.P.

(Pollution Incident Prevention Plan)

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	reman

Central Engineering - Oakbrook

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u T	Facility Location/Description	11

## EXPLANATION

I. This plan for pollution control of specific pollutants is prepared for SWIFT-ECKRICH, INC., Kalamazoo, Michigan (formerly Peter Eckrich & Sons, Inc., also Beatrice Meats, Inc.).

This plan is expected to provide sufficient information and procedures to satisfy United States E.P.A. - S.P.C.C. plan, and the Michigan D.N.R. - P.I.P.P. plan.

The plan and facility has been reviewed by John Pressler, P.E. He attests that the plan has been prepared in accordance with good engineering practices. His letter will be kept on file at the Plant Site, and follows this page.

The E.P.A. - S.P.C.C. plan will be kept on file at the Plant, as a copy is not required by E.P.A. unless recent spill or if requested.



#### TASTE THE DIFFERENCE

PETER ECKRICH AND SONS, INC. • P.O. BOX 388 • FORT WAYNE, INDIANA 46801 • PHONE (219) 481-2034

March 19, 1985

Mr. Robert Huffman Manager of Plant Engineering and Maintenance 631-45 Second Street Kalamazoo, Michigan 49007

Dear Bob:

I am in receipt of the <u>United States E.P.A. - S.P.C.C. plan and Michigan D.N.R. P.I.P.P.</u> and, as a result, have reviewed the following:

- 1. Oil Pollution Prevention Regulation, 40 CFR 112.1 112.7.
- 2. The drawings and specifications file for the installation of four 11,300 gallon oil storage tanks in the north parking lot of the Kalamazoo plant.
- 3. The SPCC plan and PIPP for the Kalamazoo plant.

I have examined the facility and have familiarized myself with 40 CFR 112.1 - 112.7, therefore I certify that the SPCC plan and PIPP have been prepared in accordance with good engineering practices and is satisfactory.

John Dee Pressler, PE

Principal Engineer, New Facilities

Indiana Registration #17815

JDP:rlt

## KNOWN MATERIALS OF CONCERN

II.

- A. Fuel oil for boilers.
  - 1. Storage Facilities.
    - a. Day tanks in boiler room (maximum capacity 800 Gals.).
    - b. North parking lot -- 4 each -- 11,300 Gals. Tanks.

(Maximum Capacity 45,200 Gals.).

- B. P.C.B. transformer removed no longer a concern.
- C. Caustic Cleaner.
  - 1. Storage facility for major caustic cleaner, tank.

(Maximum Capacity 3,500 Gals.)

- Storage facility for secondary cleaners, three tanks at 1500 gallons each, maximum.
- D. Ammonia.
  - 1. Receiver tank 5,000 lbs. (approximate).
  - 2. System 15,000 lbs. (approximate).

## EMERGENCY NOTIFICATION

A. Under normal conditions people that should be notified to determine if an emergency truly exists:

			Home Phone	Business Phone
1.	Corporate Engineering	Terry Blessing Andy Feliciano	312-680-0645 312-398-0912	312-572-4183 312-572-4182
2.	Manager Plant Engineering & Maintenance	Ralph Ringle	517-278-7120 800-412-0495	517-869-2221 Beeper
3.	Maintenance Foreman	Mike Wolf	616-649-3405	
		Carl Peterson	616-342-5001	
		Loren Gerould	616-649-1510	
4.	Plant Manager	Ken Warren	616-327-0709	
5.	Q.A. Manager	Dwain Leaser	New Listing	
6.	Industrial Relations - Safety Manager	Robert Morris	616-323-2674	

B. If known spill of pollutants has occurred contact the following:

# United States E.P.A.

National REsponse Center Region V Emergency	800-424-8802 312-353-2318
Michigan	
Michigan Response Center	800-292-4706
Michigan D.N.R.	
Lansing Plainwell (Local)	517-373-7660 616-685-9886
Other Concerned Parties	
Kalamazoo Public Utilities	

- Water 616-385-8149 - Waste Water 616-385-8157 Kalamazoo Cty. Environmental 616-383-8492

Fire/Police 911

Health or Emergency

C. Records of Notification.

In all cases any agency that is contacted, the person making the call should record <u>time</u>, <u>date</u>, and <u>person contacted</u>.

616-383-8812

Pat Krause

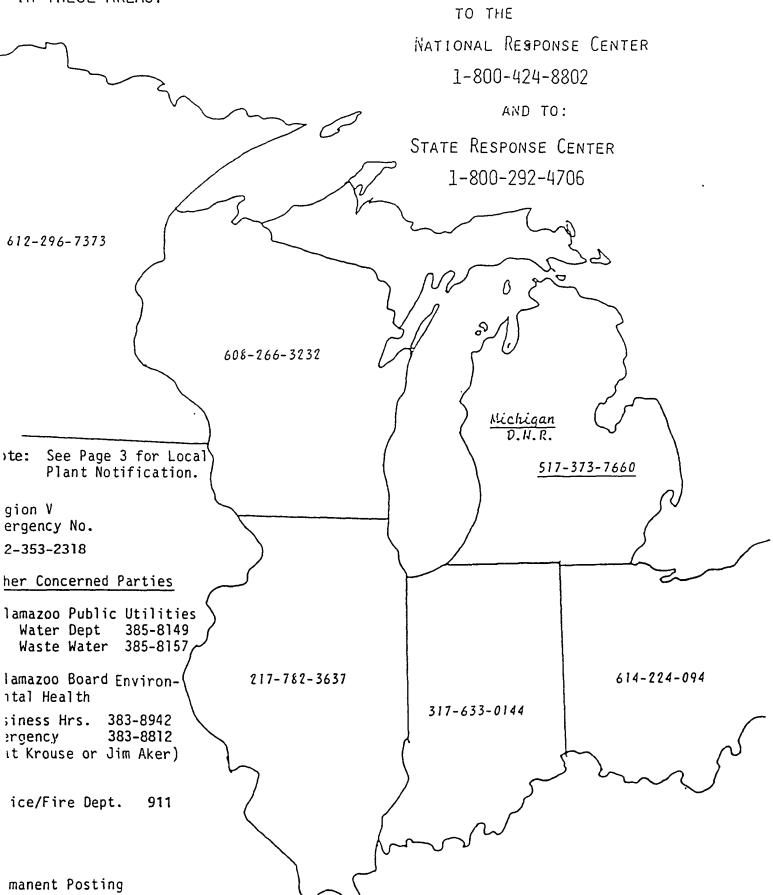
Jim Aker

REPORT

OIL OR CHEMICAL

SPILLS

IN THESE AREAS:



usend 5/00\

Plant: 002

Equipment Inventory Number:

Department: 620

Serial Number:

Equipment Name: Fuel oil tanks - 4 Group Number:

Supplier:

Location: Buried - north parking lot

# MAINTENANCE PROCEDURES (keep M-4 record minimum of 3 years)

SCHEDULE "D" (monthly) -- not in use

- 1. Measure fuel in all tanks with measuring tool/stick and record on front of M-4 card
- Check automatic gauge in boiler room to insure calibration with measuring tool/stick

NOTE: Any gain or loss discovered when tanks are not in service must be brought to attention of the Manager of Plant Engineering and Maintenance or his assignee.

SCHEDULE "D" Monthly -- in use

- Measuring of fuel in all tanks with measuring tool/stick will be performed weekly and figures presented to plant inventory manager.
- 2. Observe oil filters for any sand/foreign objects that may indicate tank or suction line leakage.

NOTE: Any unusual gain or loss of fuel or foreign objects must be brought to the attention of the Manager of Plant Engineering and Maintenance or his assignee.

# PERIODIC -- in use filling tank

- 1. Measure fuel level in tank to insure remaining capacity is sufficient to hold the full contents of the tanker.
- 2. After filling check calibration of automatic fuel gauge in boiler room with measuring tool/stick.

Plant: 002

Equipment Inventory Number:

Department: 620

Serial Number:

Equipment Name: Fuel oil tanks-4

Group Number:

Supplier:

Location: Buried - north parking Lot

# MAINTENANCE PROCEDURES (Keep M-4 record minimum of 3 years)

SCHEDULE "G" (annual)

> When tanks have been in constant use and cannot be statically checked as in monthly schedule one of the following shall be performed:

1. Pressure test all tanks and suction lines,

- Isolate a full tank and check level daily for 10 days for any loss of contents
- Empty tank to minimum and isloate empty tank and check level daily for 10 days for gain of contents
- 3. Rotate use of tanks until all have been checked

Any discrepancy from either test must be brought to the attention of the Manager of Plant Engineering and Maintenance or his assignee.

PLANT:	002 - Kalamazoo	Equipment Inventory Number
DEPARTMENT:	620	Serial Number
SUPPLIER:		Model Number
LOCATION:	Northeast Corner of Warehouse	Group
CONTEMENT NAME.	Caustic Cleaner Tanks	

EQUIPMENT NAME: Caustic Cleaner lanks

1 at 3,500 Gallons

3 at 1,500 Gallons Each

# MAINTENANCE PROCEDURES

SCHEDULE "E" (Quarterly)

- Inspect tank for any sign of leakage or damage to cylinder walls, 1. gauges, or valves.
- Inspect dike for any cracks or signs of damage. 2.
- Report any discrepancy in tank or dike to Manager Plant Engineering and Maintenance, Maintenance Foreman, or Plant Management. 3.

Plant: 002

Equipment Inventory Number:

Department: 620

Serial Number:

Supplier:

Model Number:

Location: Outside plant - east side

Group Number:

Equipment Name: Ammonia Receiver

# MAINTENANCE PROCEDURES

SCHEDULE "D" (monthly)

- 1. Inspect tank, values, and fittings for any sign of leakage.
- 2. Inspect fence and padlock for proper mechanical conditions.
- Report any discrepancies immediately to Manager Plant Engineering and Maintenance, Maintenance Foreman, or Plant Management.

Plant: 002

Equipment Inventory Number:

Department: 620

Serial Number:

Supplier:

Model Number:

Location: see below

Group Number:

Equipment Name: Posting -- Reporting Oil or Chemical Spills

and Maintaining Plans

# MAINTENANCE PROCEDURES (Keep M-4 record minimum of 3 years)

# SCHEDULE "F" (semi-annual)

- 1. Check that postings for "Report Vil or Chemical Spills" exist on:
  - Maintenance foreman's office
  - b. Maintenance department bulletin board
  - c. Boiler room office
- 2. Verify that all telephone numbers are current and correct on posting
- Verify that S.P.C.C. and P.I.P.P. plans are up to date and any revisions submitted to those on distribution list
- This maintenance procedure can only be performed by management of the plant Maintenance department.

٧.

# CONTRACTORS

(Emergency Help)

A. The following contractors are available to help in case of emergency spills or leaks:

(1)	Sergeant Oil Co. (Jim Woodruff)	616-343-1363
(2)	William Morren Builders (Bill Morren)	616-327-6763
(3)	<pre>C.L. Mahoney Co Plumbing (Bill Wells)</pre>	616-349-2676
(4)	J.C. Leonard Co. (Dave Bramer)	616-385-3840

# VI. Facility Location/Description

## A. Main Plant

- 1. Address: 631 Second Street, Kalamazoo, MI 49097
- 2. Boundary:

600 Block Second Street

500 Block S. Pitcher

600 Block E. Walnut Street

3. Longitude:

85° - 35 Minutes

Latitude:

42° - 17 Minutes 5 Seconds

. •	• •	INI TI	RIAL USER SE	ELF-MONITO	DRIN( EPORT		
(1) Facility:	Swift-Eckrich, 631 Second S					: January 10,	
	Kalamazoo, M	11 49007			(3) Sample P	oint Code: EK	E
(4) Location:	Manhole in cu	irb lawn on W	alnut Street, 1/2	2 way down th	ne building		
(5) Purpose fo	or Sampling:	Routine p  Violation Other:		Period: <u>July 1</u>	, 1991 - Decemb	er 31, 1991	
(6) Sampling I	Method:	omposite	samples c	ellected 1	a Automatic	Sample	۸
		•	1	ected w	ith both	le	
(7) Date and T					PAm End: 11		10:35 Am
(8) Date and T	ime of Grab Sa	amples: 11	12/91 1	0:35 Am	·		
(9)			RES	SULTS			
<u>Parameter</u>	Value	<u>Units</u>	Sample Type*	Parameter	Value	<u>Units</u>	Sample Type *
Cadmium, T	< 0,005	mg/L		Mercury, T	< <u>0.000</u> 5	mg/L	<u> </u>
Chromium, T	< 0.01	mg/L		Cyanide, T	< 0.02	mg/L	<u></u>
Copper, T	0.3	mg/L		рН	7.9	s.u.	<u> </u>
Lead, T	0.002	mg/L		РСВ, Т	< 0.1	Ng/L	<u></u> G
Nickel, T	(0.02	mg/L	<u> </u>		-	~	-
Zinc, T	0.05	mg/L					
* Sample Type:	G = Grab sample	C = Composite	Sample				
(10) Name of L	aboratory V	(AR Lo)	voitories d	he	(Attach	copies of Lab	poratory Results)
(11) Flow: Av	erage Daily <u>3</u>	09,036 g	el/pay	N	Naximum Daily 4	57,000	gol Dey
designed to who manage	assure that qualified the system, or tho	ed personnel prope se persons directly	erly gather and evaluer responsible for gath	uate the informati nering the informat	nder my direction or s on submitted. Based tion, the information su s for submitting false	on my inquiry of to abmitted is, to the b	the person or person best of my knowledge

(1 ge

Mail to:

INDUSTRIAL PRETREATMENT COORDINATOR Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, MI 49007-2565

#### ANALYTICAL REPORT

To: Swift Eckrich Project No.: 912582
631 Second St. Client No.: 1467

Kalamazoo, MI 49007 Project Date: 11/12/91 Date Promised: 12/03/91

Attn: Tom VerHage Date Reported: 12/02/91 PO#: 44281

Project Desc.: Quarterly/Semi-Annual sampling and analysis of two

wastewater steams.

Sample No.: 912582-01 Sample type: aqueous Rec'd on: 11/12/91

ID: "East Flume Grab, 11/12/91, 1035"

 Oil and grease
 30 mg/L

 PH
 7.9 S.U.

 PCB, total
 <0.1 ug/L</td>

 Cyanide, total
 <0.02 mg/L</td>

Sample No.: 912582-02 Sample type: aqueous Rec'd on: 11/12/91 ID: "East Flume 24hr. Composite, 11/11/91 to 11/12/91, 1040 to 1035"

BOD	189	mg/L
COD	600	mg/L
Nitrogen, ammonia	0.7	mg/L
PH	8.8	s.u.
Phosphorus, total (as P)	3.82	mg/L
Suspended solids, fixed	2.63	mg/L
Suspended solids, total	56	mg/L
Suspended solids, volatile	53.08	mg/L
Cadmium, total	<0.005	mg/L
Chromium, total	<0.01	mg/L
Copper, total	0.30	mg/L
Lead, total	0.002	mg/L
Mercury, total	<0.0005	mg/L
Nickel, total	<0.02	mg/L
Zinc, total	0.05	mg/L

		INC TE	RIAL USER S	ELF-MONITO	PO PO	RT	
(1) Facility:	Swift-Eckrich, Incorporated 631 Second Street Kalamazoo, MI 49007			(2) Due Date: January 10, 1992 (3) Sample Point Code: EKW			
(4) Location:	Manhole on	Walnut Street n	ear the west er	nd of the buildi	ng.		
(5) Purpose f	or Sampling:	☑ Routine p	eriodic report. Resampling	Period: <u>July 1</u>	, 1991 - Decer	mber 31, 1991	
(6) Sampling	Method:	omposite	sample	, collect	ed by A	tometic San	mplan
		nalo som	ples col	lected w	ith both	e	
(7) Date and	Time of Comp	osite Samples:	Start: 11/11	/91 10:0	5 Am End:_	11/12/91	10:55 Am
(8) Date and	Time of Grab S	Samples:\\	112/91 1	10.55 Am			
(9)			RE	SULTS			
<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type*	<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type*
Cadmium, T	< 0.005	ma/L		Mercury, T	<0.0005	mg/L	
Chromium, T	< 0.01	mg/L		Cyanide, T	< 0.02	male	<u>_</u>
Copper, T	0.04	my/L		Hq	7.8	<u></u>	<u>_</u> G_
.ead, T	0.004	mg/L		РСВ, Т	40.1	ug/L	<u></u> <u>G</u>
Nickel, T	6002	mg/L					
Zinc, T	0.05	mg/L				***	
* Sample Type:	: G = Grab sampl	e C = Composite	Sample				
10) Name of	Laboratory	KAR Lot	poreteries_	lnc	(Att	ach copies of Lat	ooratory Results)
11) Flow: A	verage Daily	13,647 a	clos / DAy	N	laximum Daily_	17,400 g	allan / DAy
		•	•			or supervision in acco	

12) I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature:

Title:

892

Mail to:

INDUSTRIAL PRETREATMENT COORDINATOR
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

#### ANALYTICAL REPORT

To: Swift Eckrich Project No.: 912582 631 Second St. Client No.: 1467

Kalamazoo, MI 49007 Project Date: 11/12/91
Date Promised: 12/03/91
Attn: Tom VerHage Date Reported: 12/02/91

PO#: 44281

Project Desc.: Quarterly/Semi-Annual sampling and analysis of two

wastewater steams.

Sample No.: 912582-03 Sample type: aqueous Rec'd on: 11/12/91

ID: "West Flume Grab , 11/12/91, 1055"

 Oil and grease
 5 mg/L

 PH
 7.8 S.U.

 PCB, total
 <0.1 ug/L</td>

 Cyanide, total
 <0.02 mg/L</td>

Sample No.: 912582-04 Sample type: aqueous Rec'd on: 11/12/91 ID: "West Flume 24hr. Composite, 11/11/91 to 11/12/91, 1005 to 1055"

BOD 10 mg/L COD 49 mg/L Nitrogen, ammonia <0.5 mg/L 8.8 S.U. Phosphorus, total (as P) 2.29 mg/L Suspended solids, fixed <1 mg/L Suspended solids, total <1 mg/L <1 mg/L Suspended solids, volatile Cadmium, total < 0.005 mg/LChromium, total <0.01 mg/L Copper, total 0.04 mg/L Lead, total 0.004 mg/L Mercury, total <0.0005 mg/L Nickel, total <0.02 mg/L Zinc, total 0.05 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

Ebgelith Howard another sound another adoler for II. pg 2.

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# NON-DOMESTIC USER SURVEY FORM

I.	GENERAL	INFORMATION

1.

2.

3.

4.

5.

James River Corporation	Service Products Division
Corporate Name	Plant Name
D O De 2210	2050 5 11 11
P.O. Box 2218  Address - Street and Number	2050 E. Michigan Address - Street and Number
Richmond, Virginia 23217	Kalamazoo, MI 49007
City Zip Code	City Zip Code
	444
	(616) 383-5479 Plant Phone Number
	2
Elizabeth A. Howard, Project Chem Name and Title of Person Completing Report	· · · · · · · · · · · · · · · · · · ·
name and little of Person completing Report	rnone Number
The information contained in this questionned for the knowledge and heliof such information	
of my knowledge and belief, such information	·
Jan. 14, 1984 hank A Done	ess ble Official Title Troup
Juate Signature of Responsi	Die Utticial litte /
<b>7</b> 1 4 6	
<u>Frank A. Somers</u> Print or Type Name of I	Responsible Official
Nature of business: Paper Converting a	nd Plastic Cup Forming
	,
1	
$\frac{1}{2}$ $\frac{1}{6}$ $\frac{4}{6}$ $\frac{6}{6}$ Other $\frac{3}{6}$	) (O) (7) (9)
to a lateral designation of the second secon	
Write the appropriate Standard Industrial Co	ode (Sic) in the box above.
What types of waste(s) do you discharge to	the sanitary sewer?
A. (X) Sanitary B. Wash W	Water C. C Rinse Waters
D. (X) Cooling Water E. (X) Proces	ss Waters F. Scrubber Waters
G. () Other	
Do you use, store or discharge any acids, ba	
A. (X)Yes B. ( )No	2505 01 1110 027 1415 1710 027 171
Does the operation of your processes or was	tewater treatment facility result
in a residual residue or sludge type waste?	
A. ( )Yes B. $(\overline{X})$ No	

A	his portion  Section II  ician  which appear ity Polluhich do not anufacturer's request an necessary
A. If you answered only A to question three(3), sign and return to survey form.  B. If you answer to question three (3) is other than A, complete through VIII of this form, sign it, and return to:  Jean Eldred, Industrial Surveillance Techn Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007  PROCESS AND PRODUCTS  1. Provide a complete list of products used or stored on the site on Table I (the consolidated Critical Materials List and Prior tants List). If you use trade name or proprietory chemicals whist contents on the package, indicate the trade name(s) and mane(s) at this time. You must also write the manufacturer to OSHA Form 20 for each such substance and provide POTW with the information when available, i.e., use numbers NOT chemical name The PCB is in a transformer.  (127) (167)	Section II  ician  which appear ity Pollu- hich do not anufacturer's request an necessary
B. If you answer to question three (3) is other than A, complete through VIII of this form, sign it, and return to:  Jean Eldred, Industrial Surveillance Techn Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007  PROCESS AND PRODUCTS  1. Provide a complete list of products used or stored on the site on Table I (the consolidated Critical Materials List and Prior tants List). If you use trade name or proprietory chemicals where the trade name(s) and manual contents on the package, indicate the trade name(s) and manual contents on the package, indicate the trade name(s) and manual contents on the package, indicate the manufacturer to OSHA Form 20 for each such substance and provide POTW with the information when available, i.e., use numbers NOT chemical name The PCB is in a transformer.  (127) (167)	Section II  ician  which appear ity Pollu- hich do not anufacturer's request an necessary
Jean Eldred, Industrial Surveillance Techn Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007  1. Provide a complete list of products used or stored on the site on Table I (the consolidated Critical Materials List and Prior tants List). If you use trade name or proprietory chemicals what the contents on the package, indicate the trade name(s) and mame(s) at this time. You must also write the manufacturer to OSHA Form 20 for each such substance and provide POTW with the information when available, i.e., use numbers NOT chemical name The PCB is in a transformer.  (127) (167)	ician  which appear ity Pollu- hich do not anufacturer's request an necessary
Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007  1. Provide a complete list of products used or stored on the site on Table I (the consolidated Critical Materials List and Prior tants List). If you use trade name or proprietory chemicals what contents on the package, indicate the trade name(s) and mane(s) at this time. You must also write the manufacturer to OSHA Form 20 for each such substance and provide POTW with the information when available, i.e., use numbers NOT chemical name The PCB is in a transformer.  (127) (167) (167) (167)	which appear ity Pollu- hich do not anufacturer's request an necessary
on Table I (the consolidated Critical Materials List and Prior tants List). If you use trade name or proprietory chemicals white the trade name(s) and manae(s) at this time. You must also write the manufacturer to OSHA Form 20 for each such substance and provide POTW with the information when available, i.e., use numbers NOT chemical name The PCB is in a transformer.  (127) (167) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	ity Pollu- hich do not anufacturer's request an necessary
<pre>2. Describe each process (add sheets if needed):</pre>	
3. Is any of the enclosed information considered to be confidential	al?
A. Yes B. XNO C. If yes, explain what and why for confidentiality will be processed according to 40 CFR Part	y (all requests 2):
4. Water Supply: A. (X)Municipal B. (X)Well C. (Other, e	avnlain
	-
	time unit)/day time unit)/day
5. Does your facility have a Spill Prevention Control and Counter Program (SPOC) CFR 112 or a Pollution Incident Prevention Plan MDNR Rule five (5).	
A. Yes B. XNo	

#### II. PROCESS AND PRODUCTS:

- 2. Identify each process
- A. Plastic Cups Purchased plastic pellets are extruded into a sheet, the cups are thermoformed from the sheet, cut out and packaged.

## B. Paper Converting

- One offset press that uses oil based inks
- One versetex, which is a flexographic press that uses water based inks
- Assorted paper converting units using die presses to punch out and form the product, some units are capable of printing a pattern (flexo) using water based inks.

## - 3 -III. PROCESS WASTEWATER Identify outfalls (circle): (A) Surface waters. Name of receiving waters: Kalamazoo River B. Septic tank-file field. Surface of ground. С. D: Municipal sanitary sewer. Storm sewer. F. Other, describe (include line drawing(s) of process flows and all floor drain discharging to each outfall) 2. Volumes of discharge: A. Average Daily Flow: 85,000 gallon per day B. Maximum Daily Flow: 100,000 gallon per day C. Flow is: Measured (X) Estimated 3. Type of wastewater: A. % Process 85 B. % Cooling 0 C. % Sanitary 15 D. % Other 0 4. Are drains (roof, parking lot, etc.) discharging into the sanitary sewer? B. (X)No If yes, estimate area drained sq. ft. A. (T) Yes IV. DISPOSAL PRACTICES (add extra pages if necessary) 1. How do you dispose of spent chemicals (explain)? See attached sheet A. Volume Disposed of: 2. How do you dispose of spoilage (explain)? Landfill and recycled spoilage is either returned to mill for repulping or compacted and hauled to a landfill. 3. How do you dispose of precipitates and/or sludges (explain)? None produced A. Volume Disposed of: 4. Name of waste hauler: Commercial Waste Disposalcense No. See attached sht 5. Do you have pretreatment for your wastes? A. Yes B. X No Type: If box A is checked: Size:\_\_\_\_\_ Frequency of Operation: If box B is checked, where and how are the wastes disposed of? To sanitary sewer (x)To storm sewer ( ) Industrial Waste Hauler (X) Other ( )

If other, explain

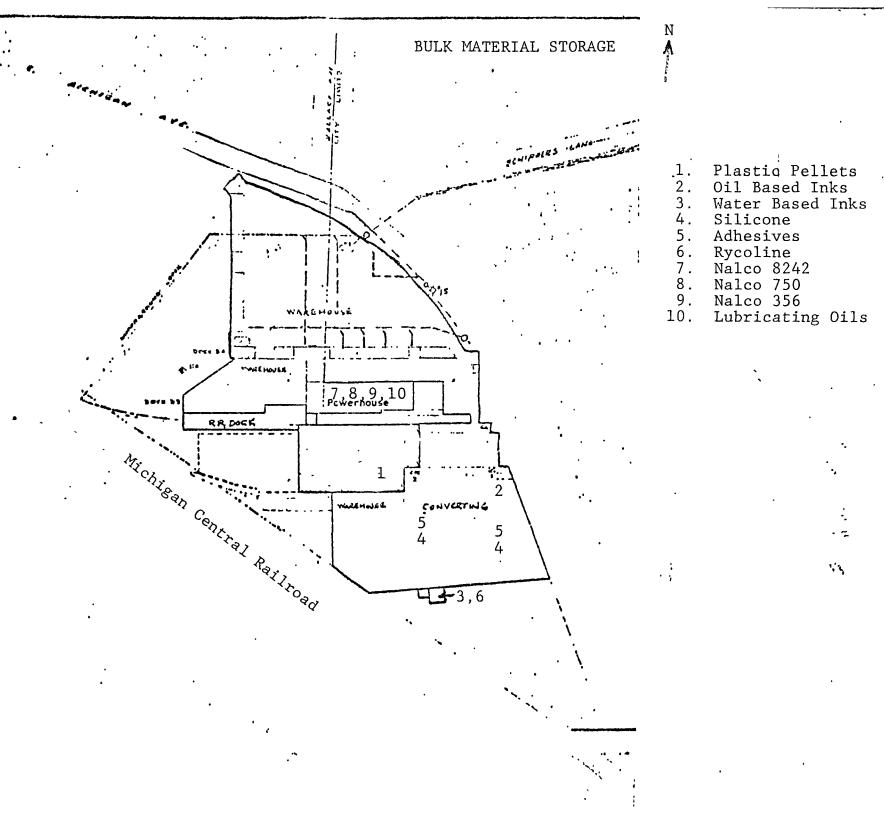
### IV. DISPOSAL PRACTICES

- 1. How do you dispose of spent chemicals?
  - Ink from press wash-ups:
    All of the ink from wash-ups on the offset press and the die press printing units is wiped up with disposable towels that are compacted and removed by the waste hauler. A small precentage of ink from the versetex flexo press is disposed of down the sanitary sewer line. Approximately two gallons per week.

### 4. License Number:

- City Number 1227
- County Number 12257
- Both issued by City Health Department

6.		you have any air emission control equipment which would discharge to the er system?  A. Yes B. X No
7.	Are	any of the materials listed in Table I discharged with the wastes?
٧.	C.	Yes B. X No List by number from Table I: C C C C C C C C C C C C C C C C C C
	1.	List bulk materials stored on site (liquid, solids), (including cleaning agents). See attached sheet.
		Material:Volume:Location in plant:
		Material: Location in plant:
	2.	Is separate secondary containment provided for bulk materials?
		A. Yes B. No C. XSome
	3.	Is separate secondary containment provided for those processes which contain chemicals listed in Table I?  A. (X)Yes B. ()No
	4.	Has separate storage been provided for those chemicals which cause hazardous reactions, i.e., acid with cyanide, acids with bases?
VI.	SAM	A. ()Yes B. ()No C. Do not have chemicals which cause hazardous reactions. PLING AND ANALYSIS
	1.	Are sampling points available for each:
	2.	A. Process Line XYes No  B. Outfall Yes XNo  Do you sample your process discharge(s)? Yes XNo  Type of sample A. Grab B. Composited  If Box B is checked, is sample composited to A. Flow B. Time
	4.	Is a sampling vault and/or manhole provided?  A. Yes B. XNo
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.): None
		What laboratory analysis (wastewater/solids) can be run on site?
		On Site - Nothing
		Laboratory availablesmiles away. Lab. is capable of running BOD, Suspended and Total Solids, pH, Oxygen Concentration, PCB Analysis
		etc.



## VII. MISCELLANEOUS

1	Describe any saf your site: The								guide
	hard hat and s	afety gl	asses					 	
			78° F. J. J. J. J. J. J. J. J. J. J. J. J. J.				<del></del>	 	<del></del>
2.	Contact Person:	Name	Eliza	beth A	. Hov	vard			
		Title	Proje	ct Che	mist				
		Phone Num	nber	(616)	383-	-5395			

## NON-DOMESTIC USER SURVEY FORM

PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.

PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.

- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.

SPENT CHEMICALS: Chemicals that have exhausted their usefulness.

STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

### JAMES RIVER SUMMARY

#### Flows:

Sunday 1/13/91 to Monday 1/14/91	4150m <sup>3</sup>
Monday 1/14/91 to Tuesday 1/15/91	4260m <sup>3</sup>
Year to Date - Daily Average	2582m³

## Solids Concentrations:

Sunday to Monday	970 mg/L´
Monday to Tuesday	215 mg/L
Year to Date Average	86 mg/L

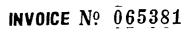
## Solids Loadings:

Sunday to Monday	4025 kg/day
Monday to Tuesday	915 kg/day
Year to Date AVerage	222 kg/day

James River called Sunday at 3:00 p.m. Charles Willis from James River called to notify us of higher solids loading.

James Kiver - PCB? 155 Keview 5R-5/20/03

NPUS # 130?





DATE

DEPARTMENT CREDIT REFERENCE

Key #4 5900-560-6460-R5601002 \$58,819.05 75900-560-6460-R5602002

TERMS: NET

\$65,212.42

PLEASE FOLLOW THESE INSTRUCTIONS

#1 MAKE CHECK PAYABLE TO CITY TREASURER

#2 MAIL TO CITY HALL AT BELOW ADDRESS #3. PLEASE RETURN A COPY WITH REMITTANCE

Georgia Pacific 2425 King Highway Kalamazoo, MI 49001

ajw

YOUR PURCHASE ORDER NUMBER

WATER ULCARTMENT 415 STOCKBRIDGE AVENUE

PHONE (616) 385-8149

KALAMAZOO, MICHIGAN 49001

Sanitary Sewer Charges for month January, 1991.

Quantity Charge: 594,104.00 M3 @ .099

Surcharges: B.O.D. 95,806.20 KGS x .374

T.S.S.  $81,613.60 \text{ KGS } \times .360$ 

Billing Charge:

TOTAL DUE:

TOTAL CHARGES LESS CREDITS

TOTAL DUE

29,380.90

58,816.30

35,831.52

2.75

\$124,031.47

EFFECTIVE 4/1/86 LATE FEE OF 11/2 WILL BE ADDED FOR BALANCES UNPAID AFTER 30 DAYS FROM DATE OF ISSUE. THIS IS EQUIVALENT TO AN 18% ANNUAL CHARGE.

40884. ....

# 201295.698

1 160411.478

	THE CITY OF	KALAMAZOO, 241 WES	T SOUTH STREE	T, KALAMAZOO,	MICH. 49007		INVOICE
2 REV	V 2-1-87						
د'	15 1/8	31/2.W	\$ 1021.38	145	2583.9	\$ 568.46	זטטע₁₽
ı	16 218	4109.3	\$ 1323.19	150	2827.5	\$ 622.05	\$ 1945.24
'	17 174	3999.2	\$ 1287.74	85	1953.6	\$ 429.79	\$ 1717.53
,	18 146	2673.4	\$ 860.83	42	769.1	\$ 169.28	\$ 1030.03
1	19 246	4790.4	<b>\$ 1542.51</b>	100	1947.3	\$ 428.41	\$ 1970.92
•	20 230	3912.3	\$ 1259.76	95	1616.0	\$ 355.52	\$ 1615.28
	21 185	1991.4	<b>\$</b> 641.23	88	1517.3	\$ 333.81	\$ 975.04
i	22 185	2076.2	\$ 368.54	10	195.9	\$ 43,10	\$ 711.64
	23 174 24 232	3215.5	\$ 1835.39	85 75	157 <b>0.</b> 8 1537.1	\$ 345.58	\$ 1380.97 \$ 1398.58
	24 252 25 182	3268.4 3881.4	\$ 1252.42 \$ 992.21	148	2370.3	: 333.15 : 521.47	\$ 1513.68
		2861.6	\$ 921,44	170 R	- 23/8·3	\$ 221.4/ p, ap	\$ 921.44
ι	26 146 27 82	1220.8	\$ 393.10	D.	0.8	\$ 8.88	\$ 393.10
1	28 166	2982.5	\$ 934.41	82	1433.8	£ 315.44	\$ 1250.05
1	29 218	3956.4	\$ 1273.76	80	1507.2	\$ 331.58	\$ 1605.54
<del>`</del>	30 150	2544.0	\$ 819.17 -	130-	2204.8	\$ 485.04	\$ 1304.23
1	31 198	3524.4	\$ 1134.86	130	2314.0	\$ 5 <b>09.88</b>	\$ 1643,94
	TOTALS		30104.41		53508.0	\$11771.79	
1							<del></del>
1							
	BILLING CHARG				ŧ	2.640	
		RGE (FLOW)					
		<u>e                                    </u>	Chico HE	ER =		3.048	
	TOTAL SURCHAR	GES			1080	ើល ខេត្ត	

Key #4

5900-560-6460-R5601002 5900-560-6460-R5602002

\$159,331.49 \$1,080.01

Georgia Pacific 2425 King Highway Kalamazoo, MI 49001

ajw

Sanitary Sewer Charges for month of January, 1991.

Commodity Charge: 594,104.00 M3 @ .337 200,213.05

Surcharges: 787.80 mg/l B.O.D. (see worksheet) 173.32

2,815.80 mg/l T.S.S. (see worksheet) 906.69

Billing Charge: 2.64

Subtotal: 201,295.70

Credits: (see worksheet) (40,884.20)

TOTAL DUE: \$160,411.50

SAMPLE - BASED ON 1990 RATES



INVOICE Nº 065382

DATE

DEPARTMENT CREDIT REFERENCE

Key #4 5900-560-6460-<u>R5601003</u> \$5,972.62 75900-560-6460-R5602003 \$33,779.06

TERMS: NET

PLEASE FOLLOW THESE INSTRUCTIONS

# 1. MAKE CHECK PAYABLE TO CITY TREASURER

# 2. MAIL TO CITY HALL AT BELOW ADDRESS #3. PLEASE RETURN A COPY WITH REMITTANCE.

ajjw

YOUR PURCHASE ORDER NUMBER

Sanitary Sewer Charges for month January, 1991.

Quantity Charge:

James River

243 Paterson

Kalamazoo, MI 49007

Attn: Jerry Krohn

81,779.00 M3 @ .073

5,969.87

Surcharges: B.O.D.

 $77,130.20 \text{ KGS } \times .365$ 

28,152.52

T.S.S.  $16,308.80 \text{ KGS } \times .345$ 

5,626.54

Billing Charge:

2.75

TOTAL DUE:

\$39,751.68

EFFECTIVE 4/1/86 LATE FEE OF 11/2 % WILL BE ADDED FOR BALANCES UNPAID AFTER 30 DAYS FROM DATE OF ISSUE. THIS IS EQUIVALENT TO AN 18% ANNUAL CHARGE.

	THE CITY OF	KALAMAZOO, 241 WEST SOUTH STR	EET, KALAMAZOO	), MICH. 49007	 INVOICE	
12 REV 2-1-87						
15 16 17 18 19 20 21 22 23 24 25 27 28 29 30 70 70 70 70 70 70 70 70 70 70 70 70 70	75 8 138 202 226 150 86 202 150 166 204 78 18 86 22 170	\$19.5 \$ 102.88 0.0 \$ 0.00 487.7 \$ 157.04 0.0 \$ 0.00 353.5 \$ 113.83 563.4 \$ 181.41 361.7 \$ 116.47 146.4 \$ 47.14 456.5 \$ 146.99 277.4 \$ 89.32 295.1 \$ 95.02 359.0 \$ 115.60 70.4 \$ 22.67 40.3 \$ 12.98 247.5 \$ 79.70 38.7 \$ 12.46 422.9 \$ 136.17 11168.5 \$ 5596.25	***************************************		\$ 100.76 \$ 0.08 \$ 102.88 \$ 0.00 \$ 157.04 \$ 0.08 \$ 113.83 \$ 181.41 \$ 116.47 \$ 47.14 \$ 146.99 \$ 89.32 \$ 15.60 \$ 22.67 \$ 12.98 \$ 79.70 \$ 12.46 \$ 136.17	**********

ETELING CHARGE (FLOW)
COMMODITY CHARGE (FLOW)
E1779 MD @ # 0.DLM / CUBIC NETEH =
TOTAL SURCHARGES

TOTAL CHARGES LESS CREDITS

101AL DUE

1. 6.14 1361.580 13681.580 37853.900

17/18: 140

Key #4

5900-560-6460-R5601003 5900-560-6460-R5602003

3 \$23,423.78 3 \$13,681.98

James River 243 Paterson Kalamazoo, MI 49007 Attn: Jerry Krohn

ajw

Sanitary Sewer Charges for month of January, 1991.

Commodity Charge: 81,779.00 M3 @ .320 26,169.28

Surcharges: 56,685.70 mg/l B.O.D. (see worksheet) 12,470.85

3,761.30 mg/l T.S.S. (see worksheet) 1,211.13

Billing Charge: 2.64

Subtotal: 39,853.90

Credits: (see worksheet) (2,748.14)

TOTAL DUE: \$37,105.76

SAMPLE - BASED ON 1990 RATES

INSPECTION MEETING PHONE CONVERSATION OBSERVATION
Name of Facility JAMES RIVER Date 5/29
Address Time 8:60 AM  Contact CHRIS MAURER 4
Purpose: RESPONSE FOLLOW UP ON CLARIFIER PROBLEMS FROM PREVIOUS
DAY
Items Discussed: UPON ARRIVAL SLUDGE JUDGE SHOWED IMPENDING
CLARIFIER INVERSION. CALLED CHRIS MANRER FROM JRC OFFICE
TO NOTIFY HIM OF NEED FOR IMMEDIATE CORRECTION. IR EMPLOYEES
BEGAN SPRAYING SURFACE OF CLARIFIED TO COOL IT DOWNAND
AT 9:05 AM BEGAN DAMMING (REEK- TO STOP INFLUENT TO
CLARIFIER, ALLOWING IT TO \$1 BE PUMPED IN SLOWLY
AFTER SOME SETTLING HAD OCCURRED IN CLARLIFIER.
BY 9:30 INVERSION NOD BEEN CORRECTED BUT STILL
Observations: HIGH SOLIDS THROUGHOUT CLORIFIER. MR MAURER-
HAD DONE TAR TESTING WITH POLYMERS PREVIOUS DAY AND HAD
FOUND A PROMISING ONE WHICH WAS ON THE WAY, HE WAS
ATTEMPTING TO EXPEDITE SHIPMENT, FLOW FROM PLANT MILL
WAS REDUCED AS MUCH AS POSSIBLE, AND CREEK WAS ALTERNATED
DAMMED AND SLOWLY BLED IN FOR THE BALANCE OF THE DAY.
Further Action Required: AT ~ 2:00 PM JAMES RIVER BEGAN
FEED ING THE NEW POLYMER_ BY 4:00 PM I OBSERVED
DEFINITE BLANKET FORMATION IN JR CLARIFIER 7'ON 11
VALL, #F. POLYMER FEED @ ~ Z4 GPD. OVER ->
Tracking Book: (please circle)
Inspection Meeting Compliance Schedule Violation Sum None
Signature

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT -CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES PURPOSE OF ANALYSIS: SAMPLERS: . 1415 N. Harrison (Signature) COMPLIANCE MONTORING Kalamazoo, Michigan 49007 616-385-8157 DATE/TIM D С **ITEM** SAMPLE Ř SAMPLE LOCATION, DESCRIPTION NUMBER & SIZE 0 Α SAMPLE I.D. & REMARKS NUMBER NUMBER OF CONTAINER М М Α В GRAB@ JRC 52991 JRC 8:01A 1-16 18:01 A HIGH SOLIDS, JRC CLARIFER CFFLUENT RECEIVED BY: (Signature) ₽. RECEIVED E (Signature) DATE/TIME ΒΥ: ₽. 3 RELINQUISHED E (Signature) 4 RELINQUISHED I (Signature) DATE/TIME 5/2 |8/26 DATE/TIME £ A. S.A.P. a. reults, **GENERAL/CONVENTIONAL** RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT **EPA METHOD 601** pΗ CADMIUM BOD TOTAL CHROMIUM CBOD HEX. CHROME RECEIVED BY: (Signature) RECEIVED I COD COPPER X3=2180 mg/L LEAD N VSS NICKEL DATE/TIME ZINC NH<sub>3</sub>-N **EPA METHOD 602** AM DATE/TIME 6) TOTAL P SILVER ORTHO P MERCURY GREASE/OIL BERYLLIUM REMARKS: ₽. ₽: CHLORIDE **BARIUM** 2C RELINOUISHED E (Signature) RELINQUISHED CN - TOTAL CN - AMENABLE OTHER Form 1015

SUSPENDED SOLIDS ANALYSIS

15201061

	1#	2#	#3				407A 7-8-8:
SAMPLE SOURCE	JRE 52991	18832.	JRC 52991	-			
Dish No.	DUN 4	TP ×10	FLY x 10	×	×	x	
Wt. Dish & Solids	238367	240718	268882				
Wt. Dish	237812	240507	268661				
MG./L. Solids	2220	2110	2210				
Wt. Dish & Solids				== 218	0 /		
Wt. Dish & Ash							
MG./L. Vol. Solids							
% Vol. Solids							
рН							
					<del></del>	4	407A 7-0-65
SAMPLE SOURCE							
Dish No.	x	×	x	×	×	×	
Wt. Dish & Solids							
Wt. Dish							
MG./L. Solids					· · · · · · · · · · · · · · · · · · ·		
Wt. Dish & Solids							
Wt. Dish & Ash							
MG./L. Vol. Solids							
% Vol. Solids							
·	<del></del>			·		<del></del>	

NALYST	RJO

DATE OF SAMPLE 5-29-91

INSPECTION MEETING PHONE CONVERSATION OBSERVATION	
Name of Facility TAMES RIVER Date 4/14/9/ Address Time //:/0 A	M
Contact CNRIS MAURER	7
Purpose: SAMPLING TO DETERMINE CAUSE	درسب د
OF FLOATING SOLIOS ON J.R. CLAR.	1
Items Discussed:	
ATTACHED PLEASE FIND SAMPLING	
RESULTS FROM 6/14/91 (JRC).	
SAMPLES WERE TAKEN TO	
REPRESENT BOTH HIGH "SCUM" WOSTEWAT	H
AND LOW "SCUM" WASTEWATER.	
BOTH SAMPLES WERE ANALYZED	
FOR OIL & GREASE TO SEE IF PRESEN	106
Observations: OF OIL MIGHT BE CONTRIBUTION	NG
TO THE TENDENCY OF SOLIDS TO	,
FLOAT IN JAMES RIVER CLARIFIER.	
<del></del>	
WITHOUT SKIMMINGS: 14.1 mg/L G+O  WITH SKIMMINGS: 49.8 mg/L G+O  3 TIMES AMOUNT OF OIL + GREDSE ON  Further Action Required: SAMPLE WITH N 30% SKIMMINGS,  STILL WELL BELOW LIMIT, LOOKS MORE  LIKE ENTRAINED GAS IS RESPONDIBLE	
3 TIMES AMOUNT OF OIL + FREDSE ON	
Further Action Required: SAMPLE WITH N 30% SKIMMINGS	
STILL WELL RELOW LIMIT 100KS MARG	
LIKE ENTRAINED GAS IS RESPANGIALE	
Ence to have the transfer to the termination of the	
Tracking Book: (please circle)	
Inspection Meeting Compliance Schedule Violation Sum None	
Signature 5 Caval	

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES 7728 No SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison INSPECTION (Signature) Kalamazoo, Michigan 49007 616-385-8157 DATE/TIME D G ITEM SAMPLE NUMBER & SIZE SAMPLE LOCATION, DESCRIPTION R Α 0 SAMPLE I.D. NUMBER NUMBER OF CONTAINER М М Α & REMARKS Ε Ε 5KIMMINGS JAMES RIVER CLARIFIER (SKIMMIES JRC61491 FROM EFFLIENT 11:10M ВY: JAMES RIVER-CURRENT JRC61491 CURIPIER EFFLIENT RECEIVED ( (Signature) JAMES RIVERCLAPHEA TRC 61491 DATE/TIME ₽.: 3 RELINQUISHED E (Signature) 4 RELINQUISHED E (Signature) 1:30 AM DATE/TIME GENERAL/CONVENTIONAL RESULT | TRACE METALS RESULT ORGANIC COMPOUNDS RESULT CADMIUM EPA METHOD 601 ρН TOTAL CHROMIUM BOD HEX. CHROME CBOD COPPER RECEIVED ( (Signature) COD LEAD TSS VSS NICKEL ZINC NH<sub>3</sub>-N EPA METHOD 602 DATE/TIME S TOTAL P SILVER 1(R ORTHO P MERCURY BERYLLIUM ₽. BARIUM REMARKS ELINQUISHED CN - TOTAL **CN - AMENABLE** OTHER Form 1015

SAMPLI	SAMPLE ID			3 261491							
DISH	D.F.	KK	2	AAO	ع	FKED	2	ween	2		
WT.DIS	SH&SOL.	260	910	268	110	237	765	254	110		
WT.DIS	<b>э</b> н	260	842	167	879	237	696	254			
MG/L S	FOL	136	68	462	231	138	69	164	82		
WT.DIS	SH&SOL.										
WT.DIS	SH&ASH										
MG/L V	OL.SOL.										

Date Analyzed 6-14-91

O Chunks in AAcumcible
prog6-14-91

X3=14673/

SAMPLI	E ID				-			
DISH	D.F.							
WT.DIS	SH&SOL.			·1		!		hmolocat
WT.DIS	SH					,		Analyst
MG/L S	SOL	I						Date Analyzed
WT.DIS	SH&SOL.							
WT.DIS	SH&ASH			<del></del>				
MG/L V	OL.SOL.							

SAMPLE	Z ID					
DISH	D.F.					
WT.DIS	SH&SOL.					Analyst
WT.DIS	SH					Date Analyzed
MG/L·S	SOL					bdoo mary nou
WT.DIS	SH&SOL.					
WT.DIS	SH&ASH					
MG/L V	OL.SOL.				L	

# GREASE AND OIL, FREON EXTRACTION Gravimetric Method



e.....Mgs...

mg/L G & O.

Sample ID # JRC61491 (CLARIFIER) Date Analyzed 6-17-91 Analyst\_ RJO Gms. Flask+Residue 129.2033 Gms. Flask 129.1898  $(\pi)$ 13,5 X 1000 Gms. G & O Mas. 0.0135 Not LIMSOL Sample Volume in mLs = 1000 0.955 955 Mgs/Volume in L. mg/L G & O 14.1 Sample ID # JRC 61491 Date Analyzed 6-17-91 Analyst\_RJG Gms. Flask+Residue 129,7315 Gms. Flask (Q) 129.6844 LIMSV Gms. G & O X 1000 Mgs. 47.1 0.0471 - 1000 = 0.945 Sample Volume in mLs = 49.8 mg/L G & O Mgs/Volume in L. Description of sample was accidently spilled after the first free add ton. The partspilled was from the top layer, therefore not containing much free atall. If the result (498), s

Date Analyzed \_\_\_\_\_\_ sample ID #\_\_\_\_\_\_\_ not (much the it. 1) not correct, then it would be somewhat lower than Analyst Gms. Flask+Residue

X 1000 ....

÷ 1000

Gms. Flask

GRE. G. & O.

Sample Volume in mle

Mgs/Volume in L.

INSPECTION MEETING PHONE CONVERSATION	OBSERVATION
Name of Facility JAMES RIVER	Date 7/9/9/
Address CHRIS MAURER_	Time 1:40 PM
Purpose: CLARIFICATION OF PROCEDURE TO BE USE	
RIVER'S DITCH PUMPDOWNS (CLARIFIER BYPASSINGS)	DURING CLEANUF
Items Discussed:	
WAS UNABLE TO REACH MAURER OR SEVERINO	BY PHONE,
LEFT MESSAGE WITH MOURER'S PHONE MAIL CO	ONCERNING
THIS NOWS INCIDENT OF TAMES RIVER FILT	ER PLANT
OPERATOR CALLING TOA TO SAY HE WAS	SENDING.
THEM "A WHOLE BUNCH OF DIRTY WATER - A	J)
EXPLAINED TO MAURER (AND OPERATOR.	DALE BRAGMER)
THAT WHILE DISCNARGES CAN BE HANDL	
Observations: TIMING OF THE DISCHARGES	/
COORDINATED WITH KWRP PERSONNEL D	
THE POSSIBILITY OF PROBLEMS FROM	
HYDRAULIC LOADINGS FOR BRIEF PER	
* NOTE: PULLED GRAB SAMPLE OF	
FOR TSS ANALYSIS.	•
Further Action Required:	
Tracking Book: (please circle)	
Inspection Meeting Compliance Schedule Viblati	on Sum None
Signature	

CITY	OF KAL	AMAZOO	CH	AIN	OF CUSTOR	Y REC	ORD	AND	LAB	ANALYSIS	REPORT FORM		
	RTMENT Harrison	T OF PUBLIC UTILITI	ES SAMF	PLERS		11/		PU	RPOSE	OF ANALYSIS:		No	7819
	zoo, Michi	igan 49007	(Sign	aturej	7XN/XI				INS	PECTION		]	<del></del>
	EM	SAMPLE I.D.	SAMPLE		NUMBER & SIZE	D A	T	C	G R	SAMPLE LOC	ATION, DESCRIPTION	DATE/TIME	DATE/TIME
NUN	/BER	!	NUMBER		OF CONTAINER	T E	M E	M P	A B	8/	REMARKS	DATE	DATE
	/	JAMES RIVER WATER	JRC 7099	7	1-14	7/9/91	12:15	En	H	CLARIFIER B.	DITCH WATER. LACK/BUILT UP OVER 2 DAIS		
						///						.: ₩	ВУ:
			<del> </del>			<del> </del>		_				VED ture)	VED ture)
				-		<del> </del>			_			RECEIVED (Signature)	RECEIVED (Signature)
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												DATE/TIME	DATE/TIME
												DAT	DAT
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			<u> </u>			<del> </del>	ļ			<del> </del>		HED	문
												QUIS ture)	QUIS ture)
												3 RELINQUISHED I (Signature)	4 RELINQUISHED I (Signature)
													101
GENI	ERAL/CO	DNVENTIONAL	RESULT	TRAC	CE METALS	RES	ULTIO	RGANIC	COMP	OUNDS RESULT	<b>₹</b>		┦┇ ───┤
1	ρН		7.1 RUSTRAK		CADMIUM			EPA	METHOD	601	DVRING SED	2 Verte	DAT
	BOD				TOTAL CHROMIUM						WN DU	7	
	CBOD		<u> </u>		HEX. CHROME				·		200	BY:	75%
	COD				COPPER						30	VED VED	VED ure)
V	TSS VSS	400 n	ng/l		NICKEL						PUMPDOWN LIFIER BY	RECEIVED (Signature)	RECEIVED I
	NH <sub>3</sub> -N				ZINC			FPA	METHOD	602	PUN		
	TOTAL P	1	+		SILVER						6	/TIME /2:4	1 1
	ORTHO	P J.Why	9/		MERCURY			_			DITCH CL	DATE 19/9	DATE/
	GREASE	/OIL			BERYLLIUM						A ,	1	
	CHLORII	DE.			BARIUM						. S. o.	ED BY	A G
	CN - TO	ΓAL									A B K	1	SHE (S
	CN - AM	ENABLE						ОТН	ER		CLEANUP	RELINOM (Signature	ature
											] " ~	1 RELINO (Signatu	2 RELINQUISHED BY: (Signature)

SAMPLE	E ID		) R'_	70	099	7]		7	·	•
DISH	D.F.	ST	x 10							
WT.DIS	H&SOL.	231	525				,			Analyst SB
WT.DIS	Н	2314	185						γ	Date Analyzed 7-9-9
MG/L S	OL	40	40 0				L		<u> </u>	
WT.DIS	H&SOL.									
WT.DIS	H&ASH									
MG/L V	or.sor.						L		L	

.

SAMPLE	E ID			1	
DISH	D.F.				
WT.DIS	SH&SOL.				Analyat
WT.DIS	SH		/		Analyst Date Analyzed
MG/L S	SOL		Ŀ		Date Malyzed
WT.DIS	SH&SOL.				
WT.DIS	SH&ASH		·		
MG/L V	OL.SOL.				

SAMPLE	E ID			-			
DISH	D.F.						
WT.DIE	H&SOL.						Analyst
WT.DIS	SH		•				Date Analyzed
MG/L· S	SOL	[					Date Midiyzed
WT.DIS	H&SOL.						
WT.DIS	SH&ASH						
MG/L V	OL.SOL.						



DEPARTMENT OF PUBLIC L

Water Re 1415 N Yalemezoo Michigan 490

(616) -

October 15, 1992

Ms. A niette Gassner James River Corporation 243 East Patterson Z40 Kalamazo, MI 49007

Dear Ms. Gassner:

As per your request, enclosed please find the PCB results from your facility which As per furnished to Mark P. Brown of Blasland & Bouck Engineers in accordance with were furnished om of Information Act. were reedom of Information Act.

**NEW PHONE NUMBERS** 

(616) 337-8157

FAX (616) 337-8699

If you have any questions, please feel free to contact me at 337-8715.

sincerely,

Kint metinger

Kent Mottinger Kent William Services Supervisor Industrial Services Supervisor

c: file



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

October 13, 1992

Ms. Annette Gassner James River Corporation 243 East Patterson Kalamazoo, MI 49007

Dear Ms. Gassner:

The City of Kalamazoo recently received a request under the Freedom of Information Act (FOIA) for "...analyses of PCBs in samples of effluent from industries which discharge to the Water Reclamation Plant". In compliance with the FOIA, we provided the results of all PCB analyses performed on the wastewater discharges of all non-domestic users of the Kalamazoo Water Reclamation Plant, including your facility. The data was sent to the requester on October 12, 1992.

The name and address of the requesting person is:

Mark P. Brown, Ph.D. Blasland & Bouck Engineers, P.C. 6723 Towpath Road, Box 66 Syracuse, New York 13214

Please feel free to call me at 337-8715 if you have any questions.

Sincerely,

Kent Mottinger

Heat Mattenger

Industrial Services Supervisor

c:

R. Cinabro

R. Amundson

B. Merchant

LRS7-91

INDUSTRIAL SUSPENDED SOLIDS (mg/1)

199.	1	JAMES RIVER TSS	JAMES RIVER VSS	GEO PAC TSS	GEO PAC VSS	UPJOHN TSS	UPJOHN VSS
JULY	1	36	28	224	140	2180	1620
JULY	2	110	70	148	60		
JULY	3	68	36	68	24	1360	760
JULY	4	28	24	64	32	320	260
JULY	5	48	44	144	84	2050	1670
JULY	6	28	24	40	12	370	240
$10\Gamma\lambda$	7	60	32	16	10	320	250
JULY	8	¥ 260	220	220	120	1400	860
JULY	9			76	28	420	190
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JULY	30						
JULY	31						
RAGE =		80	60	111	57	1,053	731
IMUM =		260	220	224	140	2,180	1,670
IMUM =		28	24	16	10	320	190
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## DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison ۲۵،۸ تاکان Michigan 49007-2565 (616) 385-8157

October 31, 1990

Mr. Christopher Maurer James River Paper Company 243 East Paterson Kalamazoo, MI 49007

Re: Requested Information

Dear Mr. Maurer:

In the table listed below, please find the information you requested in your letter dated October 24, 1990. This information is based on averages of flow, total suspended solids (TSS) and biochemical oxygen demand (BODs) for January through September 1990. Please also note that the NPDES Permit Number for the City of Kalamazoo Water Reclamation Plant (KWRP) is MI0023299.

	FLOW (in MGD)	TSS LOADING (lbs/day)	BOD LOADING (lbs/day)
KWRP	30.4	60,248	80,377
JAMES RIVER	0.6814	488	4,369
% OF TOTAL LOADING	2.24%	0.81%	5.44%

Please call me at 385-8157 if you have any additional questions.

Sincerely,

Bruce E. Merchant

Industrial Services Supervisor

BEM/rjg

c: file

Mr. Bruce Merchant Supervisor Industrial Treatment Department of Public Works 1415 N. Harrison Kalamazoo, MI 49007-2565 October 24, 1990

Dear Bruce,

The USEPA has prepared a questionnaire for the Pulp, Paper, and Paperboard industry requesting information on the manufacturing and wastewater treatment practices of the James River Corporation, Kalamazoo facility. The responses given are to be used in revising the effluent limitation guidelines and standards for our industry.

Since our treatment facility effluent discharges to the City of Kalamazoo, the USEPA has requested information relative to our discharge into the city's facility.

I would greatly appreciate your assistance in completing the following:

- \* What percentage of POTW influent volume is contributed by the James River facility's discharge
- \* What percentage of POTW TSS load is contributed by the James River facility's discharge
- \* What percentage of POTW BOD, load is contributed by the James River facility's discharge
- \* What is the city POTW wastewater treatment plant NPDES permit number

Please provide the above information by November 9 so that we can incorporate the responses into the questionnaire. Your assistance in this matter is appreciated. If you have any questions, please feel free to give me a call.

Sincerely,

Christopher J. Maurer Environmental Engineer

CJM/cjm

cc: D. Bennett, JR

P. Zirngibl, JR

MO NY 4 25 75 M3 + 2.0 245 Seep on 3/24 188 ntoxes pennit \*
MIT 00 33299 2000 4 4 20 165 Sales 4 2.0 165 (moles 8861) 2484090 Calon Total Flow 94, 183 m3/245 86 mg 1000 g 86 mg /2 (681, 400 Gal, BOS 2,599 m3

## 1990 KALAMAZOO WATER RECLAMATION PLANT LOADINGS

L				501		***		***************************************			800		
<u> </u>	MONTH	MUN FLOW MGAL -	CONC MG/L -	MUN LBS/DAY	IND FLOW MGAL	CONC MG/L	IND —LBS/DAY	TOTAL SS LBS/DAY	MUN FLOW MGAL	CONC MG/L	MUN LBS/DAY	IND FLOW MGAL	C (
	JAN	25.3	271	57182	5.2	97	4207	61388	25.3	301	63512	5.2	
	FEB	24.2	248	50053	5.2	126	5464	55518	24.2	297	59943	5.2	
<u> </u>	MAR	25.6	-260	55511	5.5	— <sub>112</sub>	5137	60648	25.6	307	65546	5.5	
	APR	26.3	261	57248	5.3	111	4906	62155	26.3	262	57468	5.3	
	MAY	24.3	286	57961	5.6	84	3923	61884	24.3	305	61812	5.6	
	JUN	24.2	<sub>258</sub>	52072	5.1	76	3233	55304	24.2	335	67612	5.1	
	JUL	24.0	299	59848	5.7	80	3803	63651	24.0	363	72658	5.7	
	AUG	25.0	254	52959	5.9	71	3494	56453	25.0	347	72350	5.9	
	SEP	25.7	284	60872	5.5	95	4358	65230	25.7	338	72446	5.5	
·	AVERAGE	25.0	269	55967	5.4	95	4281	60248	25.0	317	65927	5.4	
	TOTAL	224.6		503706	49.0		38525	542231	224.6		593346	49.0	
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29.4 MGD TOTAL FLOW
60,248

60,348

80,377

1330 50 Day 800

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	25.3	301	63512	5.2	320	13878	77389		20
	24.2	297	59943	5.2	298	12924	72867		22
	25.6	307	65546	5.5	259	11880	77426		26
	26.3	262	57468	5.3	262	11581	69049		28
	24.3	305	61812	5.6	306	14291	76103		30
	24.2	335	67612	5.1	400	17014	84626		34
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Mr. Gregory A. Danneffel, P.E. Surface Water Quality Division Michigan DNR P.O Box 355 Plainwell, MI 49080

March 26, 1990

Dear Mr. Danneffel,

Pursuant to our conversation and NPDES permit, the following is a detailed report of the spill which occurred on October 5, 1989. The material spilled by James River was Mobil DTE 797 Steam Turbine Oil (refer to attached MSDS); it came from a 55 gallon drum and a discharge off of a centrifuge. It entered the storm sewer via a floor drain sump pump.

The spill was discovered by a resident located on the Kalamazoo River; the MDNR was contacted. The spill was tracked to a city owned storm sewer and the City of Kalamazoo notified and involved. Back tracking through the sewer system resulted in source determination. The oil was emanating from a sewer discharge off the James River property on North Pitcher. James River personnel were immediately involved following source determination.

The sheen was tracked to a catch basin adjacent to James River's Citizens Recycling Center. The catch basin receives flow from roof drains, storm sewers, and building 1B which houses boiler #8. At the time of the incident, two sump pumps within building 1B were discharging into the catch basin. The first sump collects non-contact cooling water; permits for discharge are currently being secured. The second sump pump collects floor drains within the building; its discharge is usually to our wastewater treatment plant, however it had been redirected via existing piping to the storm sewer.

To correct this incident, the floor sump pump discharge was immediately redirected to our wastewater treatment plant and floor dry thrown over the spilled oil; all existing pipe systems to the storm have since been removed. Centrifuge discharge alternatives have been considered and an approach concluded. During the next Plant shutdown (July), the centrifuge will be raised to a level which allows discharge into a 55 gallon drum; in the meantime, a catch pan has been placed beneath the discharge point. In addition to these modifications, spill response procedures have been reviewed with the supervisor of the area in an effort to prevent and minimize discharges of this kind in the future.

Containment measures were initiated by the MDNR. Spill booms were placed across the Zantman drain (the final discharge point of the city sewer system just prior to its discharge into the Kalamazoo River). In order to enable containment of future spills, James River has purchased spill booms and blankets in sufficient quantities to respond to a spill of similar size.

Clean-up measures were undertaken by a spill response team under contract with James River. The contractor placed spill booms in front of and in back of the existing spill boom. Blankets were used to absorb the material captured. The booms were left in place for an additional 4 days to allow capture of any residual oil within the storm sewer system. The booms were drummed and stored at the site until analytical work on the captured material was complete; this was done to ensure proper disposal.

Analytical results were received on October 25. The results showed a PCB concentration of 300 ppm arochlor 1260. Actions were immediately initiated by James River to determine possible sources. For a detailed listing of events which took place, refer to the letter dated March 12, 1990 addressed to Mr. Gregory A. Danneffel. Per your request and for completeness, I have included copies of the analytical results received since the incident. Note that the 797 Oil spilled on October 5 was not sampled, rather it was the 797 Oil being used on October 25 - 20 days later. However, we would not anticipate the chemical or physical characteristics of the oil to be any different from that of the material used on October 5.

If you have any questions or require further information, please let me know. I hope this fulfills the requirements of our permit and your request. Let me know if there is anything else that would be of use to you.

Sincerely,

Christopher J. Maurer Environmental Engineer

Christym Maurer

CJM/cjm

c: P. Zirngibl, James River

B. Merchant, City of Kalamazoo

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PAGE 1

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MOBIL MATERIAL SAFETY DATA BULLETIN

MOBIL OIL CORPORATION

ENVIRONMENTAL AFFAIRS AND TOXICOLUSY CEPT.

P. G. BOX 1031 PRINCETON, N.J. 08540 (USA)

PRODUCT IDENTIFICATION \*\*\*\*\*\*\*\* MOSIL OTS 797 DIL

SUPPLIER:

MOBIL DIL CORP.

CHEMICAL NAMES AND SYNONYMS:

PET. HYDROCARBONS AND ADDITIVES

USE OR DESCRIPTION:

STEAM TURBINE OIL

HEALTH EMERGENCY TELEPHONE: (212)833-4411

TRANSPORT EMERGENCY TELEPHONE:

(900)424-9300(CHEMTREC) OTHER DESIGNATION:

(TRN 600114)

TYPICAL CHEMICAL AND PHYSICAL PROPERTIES \*\*\*\*\*

APPEARANCE:

ASTM 9.5 LIQUID

VISCOSITY:

SUS AT 100 F. SUS

AT 40 C. CS

00 OR:

160.0 AT 210 F. SUS 30.0

CJIM

VISCOSITY:

44.0

AT 100 C, CS 5 - 3

RELATIVE DENSITY: 15/4 C

SOLUBILITY IN WATER:

NEGLIGIBLE

TLV(TWA):

PH: NA

0.559 MELTING POINT: F(C)

NA

POUR PRINT: F(C) 20(-7)

BOILING PCINT: F(C)

> 600(316)

FLASH POINT: F(C) (METHOD) 410(210) (ASTM D-92)

VAPOR PRESSUPE: MM HG 200

< .1

NE=NOT ESTABLISHED NA=NOT APPLICABLE D=DECOMPOSES \*\*\*\*\*\*\*\*\*\*

INGREDIENTS

MG/M3 PPM

WT PCT (APPROX)

HAZARDOUS INSPEDIENTS:

NONE

NON-HAZARCOUS INGREDIENTS:

REFINED MINERAL DILS

> 95

ADDITIVES AND/OR OTHER INGREDS. 5

NOTE: TLVS SHOWN FOR GUIDANCE ONLY. FOLLOW APPLICABLE REGULATIONS.

INFORMATION GIVEN HEREIN IS OFFERED IN GOOD FAITH AS ACCURATE, BUT WITHOUT GUARANTEE. CONDITIONS OF USE AND SUITABILITY OF THE PRODUCT FOR PARTICULAR USES ARE BEYOND OUR CONTROL; ALL RISKS OF USE OF THE PRODUCT ARE THEREFORE ASSUMED BY THE USER AND WE EXPRESSLY DISCLAIM ALL WARRANIIES DE EYERY KIND AND NAIURE, INCLUDING WARRANIIES DE MESCHANIABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. NOTHING IS INTENDED AS A RECOMMENDATION FOR USES WHICH INFRINGE VALID PATENTS OR AS EXTENDING LICENSE UNDER VALID PATENTS. APPROPRIATE WARNINGS AND SAFE HANDLING PROCEDURES SHOULD BE PROVIDED TO HANDLERS AND USERS.

\*\*\*\*\*\*\*\*\*\*\*\* FIRE AND EXPLOSION HAZARD DATA \*\*\*\*\*\*\*\*\*\*\*\*\*

FLASH POINT: F(C) (METHOD)
410(21C) (ASTM D-92)

FLAMMABLE LIMITS: LEL

UEL

. 6

7.0

EXTINGUISHING MEDIA:

CARBON DIOXIDE, FOAM, DRY CHEMICAL AND WATER FOG.

SPECIAL FIRE FIGHTING PROCEDURES:

FIREFIGHTERS MUST USE SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

EFFECTS OF OVEREXPOSURE: SLIGHT SKIN IRRITATION.

\*\*\*\*\*\*\*\* EMERGENCY AND FIRST AID PROCEDURES \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*
EYE CONTACT:

FLUSH WITH WATER.

SKIN CONTACT:

WASH CONTACT AREAS WITH SOAP AND WATER.

INHALATION:

NOT EXPECTED TO BE A PROBLEM.

INGESTION:

NOT EXPECTED TO BE A PROBLEM WHEN INGESTED. IF UNCOMFORTABLE SEEK MEDICAL ASSISTANCE.

\* REACTIVITY DATA \*\*\*\*\*\*\*\*\*\*\*\*\*

STABILITY: (THERMAL, LIGHT, ETC.) CONDITIONS TO AVOID:

STABLE EXTREME HEAT

INCOMPATIBILITY: (MATERIALS TO AVOID)

STRONG DXIDIZERS

HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON MONOXIDE.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR

CONDITIONS TO AVOID:

REPORT SPILLS AS REQUIRED TO APPROPRIATE AUTHORITIES. U. S. CDAST GUARD REGULATIONS REQUIRE IMMEDIATE REPORTING OF SPILLS THAT COULD REACH ANY WATERWAY INCLUDING INTERMITTENT DRY CREEKS. REPORT SPILL TO COAST GUARD TOLL FREE NUMBER 800-424-8802.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

ADSORB ON FIRE PETARDANT TREATED SAWDUST, DIATOMACEOUS EARTH, ETC. SHOVEL UP AND DISPOSE OF AT AN APPROPRIATE WASTE DISPOSAL FACILITY IN ACCORDANCE WITH CURRENT APPLICABLE LAWS AND REGULATIONS, AND PRODUCT CHARACTERISTICS AT TIME OF DISPOSAL.

#### WASTE MANAGEMENT:

DISPOSE OF WASTE BY SUPERVISED INCINERATION IN COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS.

NO SPECIAL EQUIPMENT REQUIRED.

#### SKIN PROTECTION:

NO SPECIAL EQUIPMENT REQUIRED. HOWEVER, GOOD PERSONAL HYGIENE PRACTICES SHOULD ALWAYS BE FOLLOWED.

#### RESPIRATORY PROTECTION:

NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

#### VENTILATION:

NO SPECIAL REQUIREMENTS UNDER ORDINARY CONDITIONS OF USE AND WITH ADEQUATE VENTILATION.

#### OTHEP:

#### ACUTE

DRAL TOXICITY: (RATS) -

NONTOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

DERMAL TOXICITY: (RABBITS)

NONTOXIC(ESTIMATED) --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

INHALATION TOXICITY: (RATS)

NOT APPLICABLE ---HARMFUL CONCENTRATIONS OF MISTS AND/OR VAPORS ARE UNLIKELY TO BE ENCOUNTERED THROUGH ANY CUSTOMARY OR REASONABLY FORESEEABLE HANDLING, USE, OR MISUSE OF THIS PRODUCT.
EYE IRRITATION: (RABBITS)

EXPECTED TO BE NON-IRRITATING. --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SKIN IRRITATION: (RABBITS)

MAY CAUSE SLIGHT IRRITATION ON PROLONGED OR REPEATED CONTACT. --- BASED ON TESTING OF SIMILAR PRODUCTS AND/OR THE COMPONENTS.

SUBACUTE AND MUTAGENICITY (SUMMARY)

CHRONIC OR SPECIALIZED (SUMMARY)

OTHER DATA

FILE CODES:

(FILL NO: NTL258001 ) MHC: 0\* 0\* NA 0\* 1\* PPEC: US84-071 APPROVE
8874

ENVIRONMENTAL AFFAIRS AND TOXICOLOGY DEPT. REVISED:
MANAGER OF PRODUCT SAFETY INFORMATION, PHONE: 609-737-5596 4/17/84



WORK ORDER NUMBER

07846

5100 West Michigan Avenue: Kalamazoo, MI 49007 • In Michigan: 1-800	0-632-4176 • Oti BRIE	ner States: 1 F PROJEC	-616-375-9599 CT DESCRIPT	ion:				
COMPANY NAME JAMES REVER	·				. 11			
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CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC UTILITIES
WATER RECLAMATION PLANT
1415 N. HARRISON STREET
KALAMAZOO, MICHIGAN 49007
(616) 385-8157

	REPLY REQUESTED
X	NO REPLY NEEDED

то	
Mr. Chris Mauer	DATE October 9, 1989
James River Corporation	SUBJECT Attached Work Order
243 East Paterson Street	from Terra Enviromental
Kalamazoo, MI 49007 MESSAGE	
Chris - Attached is the copy of the Terra En	viromental work order I received this
morning after they completed drumming up the	materials collected from the booms on the
drain at the back of the Water Reclamation Plants	ant. Please note that the drums will be
on-site until disposal authorization (i.e. la	b analytical work) is received. If for
any reason these drums should leak, I will con	ntact you for clean-up work ( if necessar
Please call me if you have any questions or consEPLY	oncerns.
	Bruce E. Merchant

Form 614 10/86



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## TERRA ENVIRONMENTAL CORP. CAL REPORT# 4345

SAMPLES RECEIVED 10/12/89

James River

LAB# 9100635 HYDROLIC OIL 89-340 FROM RIVER SPILL

Canton Analytical Labs
PAGE 1
Vecid 11:00 on 10/25/89 from
Barbara Allen, TERRA

LAB# UNITS	9100635 mg/kg	
WASTE CHARACTERIZATION, DNR2	plane alle auto auto auto auto auto auto auto auto	1
Ignitibility, Deg. F	*	į E
Corrosivity, pH Units	6.8	ूँ , र स्
REACTIVITY		1
as Cyanide	< 0.05	1
as Sulfide	< 0.5	
Arsenic, Total	*	
Barıum, Total	0.45	
Cadmium, Total	0.06	, *
Chromium, Total	0.06	
Copper, Total	1.1	ı
Lead, Total	0.46	•
Mercury, Total	*	\$ ; , 5£
Selenium, Total	*	1 1
Silver, Total .	0.05	· ·
Zinc, Total	1.6	, !

<sup>\*</sup> These analyses could not be performed due to insufficient sample volume.

Lack of sample is also the reason for substituting total metal Santon Analysical Laboratory, Inc.

LAB# UNITS	9100635 mg/kg
PCB'S BY AROCHLOR	
PCB-1016	< 1.0
PCB-1221	< 1.0
PCB-1232	< 1.0
PCB-1242	< 1.0
PCB-1248	< 1.0
PCB-1254	< 1.0
PCB-1260	300
PCB-1262	< 1.0
Privide - sample out chromatogram  A rochlor 1260 Standard  A black ran on same day	300

Canton Analytical Laboratory, Inc. (313) 483-7430 FAX (313) 545-1541



INFORMATION REQUEST FROM C.A.L.
REGARDING ANALYSIS OF OIL SPILL MATERIALS.

January 15, 1990

Christopher Maurer JAMES RIVER CORPORATION 243 E. Paterson Kalamazoo, MI 49007

Dear Mr. Maurer:

Enclosed are copies of the three chromatographs which were faxed to you on 1-12-90.

Please let me know if you have any further questions.

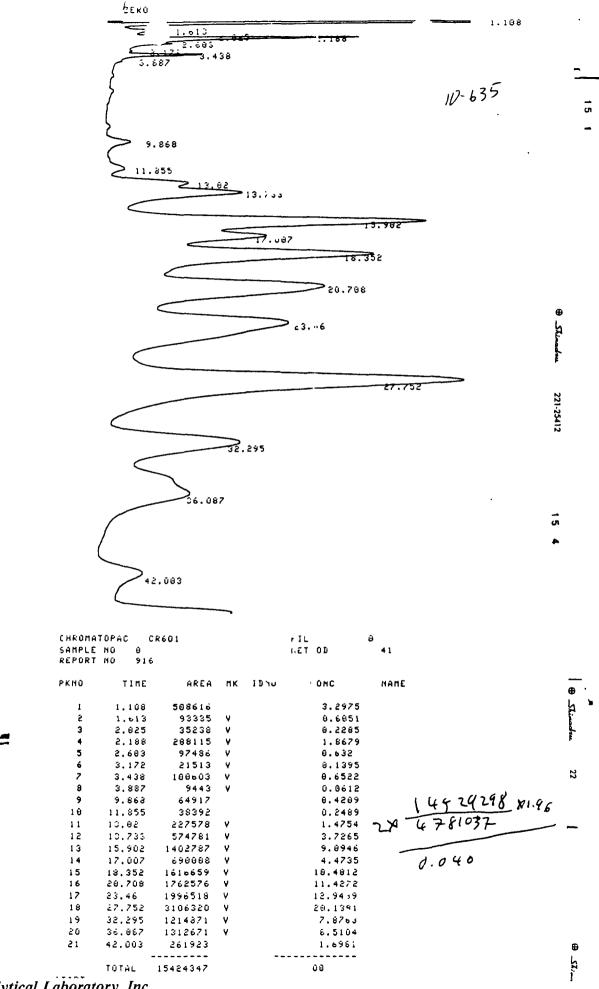
Sincerely,

CANTON ANALYTICAL LABORATORY, INC.

John Chuey

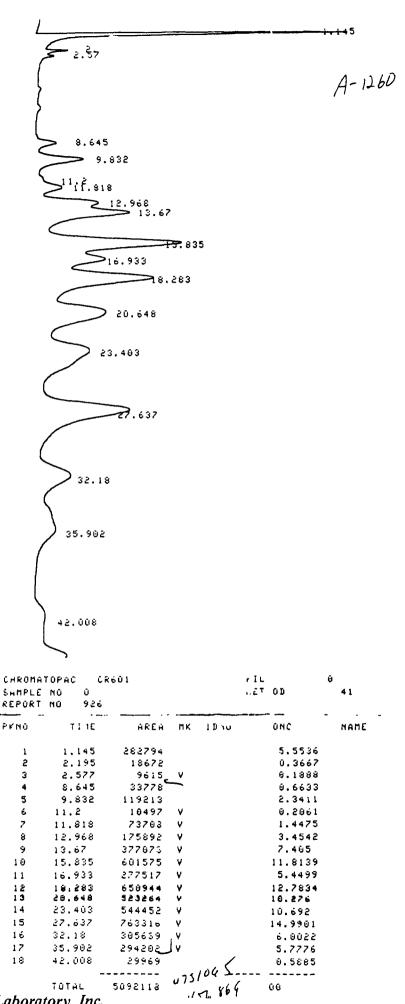
OA/O¢ Coordinator

TC /+



Canton Analytical Laboratory, Inc.

(313) 483-7430



QUEST FOR LA	ABORATORY	TES ,		
SAMPLE: Spill Com - Uice  Spill Com - Uice	Moure	<u>;</u>	DATE	
SAMPLE: Spill Com - Unic	t Down		105 10/	25
Spell Brown - 80	+ Pruce	Stern	1 10	1-,-
,			. ``	<del>-</del>
PRODUCTION [ COMPLAIN	Le 1000	in - 10	(2-7)	
PRODUCTION COMPLAIN	T E J		SUBMITTE	D SAMPLE [
SAMPLE TESTING CONDITION:   AS RECEIVED	CONDIT	FIONED (73 F.	&50%RH)	
DISPOSITION OF SAMPLE: RETURN	_ DESTROY	нс	)LD UNTIL	
TESTS WANTED:		SAMPL	_E #'S	
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PCB analysis				<del> </del>
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REPORTED E	3Y		11117	7 86

### .. EQUEST FOR LABORATORY TES. 3

LAB. NO. 14 826 SI	JBMITTED BY	Maure	DATE_	10/25/89
SAMPLE:Tuc	bine oil	-		<del></del>
In	bine oil to Wash/U	Jaste		
	······································			·
PRODUCTION	COMPLAINT		SUBMITTE	D SAMPLE
SAMPLE TESTING CONDITION:			IED (73 F.&50%RH)	
DISPOSITION OF SAMPLE: F	RETURNDE	ESTROY	HOLD UNTIL	-
TESTS WANTED:	(1 00/-		SAMPLE #'S	
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	6.1	A 1	OLA'S	
	011	1/0	PCP 3	
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COMMENTS:				
K REQUESTED BY (CHECK ONE PAPER DIVISION	<del></del>	•		•
PARCHMENT DIVISION PRODUCT DEVELOPMENT	REPORTED BY	CHRI	CS MANGAI 125/89	V
SERVICE PRODUCTS DIVISION	DATE _	10	125/89	



# Environmental Evaluation and Laboratory Services, Inc.

A. Clark Kahn III, Ph.D. President & Laboratory Director

November 3, 1989

REPORT ANALYSIS ON SUMP PUMP FOR FLOOR DRAINS. CALLED NOVEMBER 1 WITH INFORMATION BELOW.

James River Corporation 243 E. Paterson Kalamazoo, Michigan 49007 Attn: Mr. Cris Maurer

Dear Cris;

Re: PO # 34629-D

The analysis of the floor sump samples from building 1A (Powerhouse) for Polychlorinated Biphenyls returned with the following results:

Sample PCB content Method LOD\*

Floor Sump Bldg 1A Not Detected 0.01 mg/l

It is hoped that our services met your needs and that you will consider us for future analytical needs. If you have any questions or concerns, please feel free to contact us at your convenience. Please use our laboratory number S-1877.

Sincerely,

David H Andrews, CHMM Director of Operations January 17, 1990

## REQUEST FOR MONR MEETING

Mr. Gregory A. Danneffel, P.E. Environmental Engineer Surface Water Quality Division 621 N. 10th Street Plainwell, MI 49080

Dear Mr. Danneffel,

We would like to schedule a meeting with you to discuss the spill which occurred on October 5, 1989. As you will recall, the spill was discharged to the Kalamazoo River, via a city storm sewer.

At the time of the incident, the spill was determined to be emanating from a powerhouse catchbasin adejacent to N. Pitcher Street. Subsequent analysis of the material collected at the spill boom located at the Kalamazoo River showed results inconsistent with the material spilt within the powerhouse. We would like to meet with you to review these results with us.

Please call my office at (616)383-5119 to set up the meeting. I look forward to your call.

Sincerely,

Christopher J. Maurer Environmental Engineer

CJM/cjm

cc: D. Bennett

P. Zirngibl

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: James River Corporation

100 Island Ave.

Parchment, MI 49004

Attn: Mr. Christopher Maurer

Project No.: Client No.: 900144

Project Date:
Date Promised:

1/16/90 1/23/90

Date Reported:
PO#:

1/23/90 35758-D

Project Desc.: Analysis of two liquid samples.

Sample No.: 900144-01

Rec'd on: 1/16/90

Sample ID: Powerhouse Catch Basin

PCB, total

<0.1 ug/L

Sample No.: 900144-02

Sample ID: West Manhole

PCB, total

<0.1 ug/L

Rec'd on: 1/16/90

Unless otherwise noted, test results represent the sample(s) as they were received.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Eleam H Bourna

Director

WHB/1k



Cary of Original

William H. Bouma, Ph.D. Laboratory Director KAR Laboratories, Inc. 4425 Manchester Rd Kalamazoo, MI 49002 January 16, 1990

Dear Bill,

Accompanying this letter are two sample replacements for the three samples dropped off at your office last night. The Blank Sample has not been duplicated. We felt that it was not needed.

As we discussed, the plastic containers which hold the samples taken last night are not compatible with organic contaminants. Please accept these two samples as replacements, disregarding the three samples turned in yesterday.

All billing will remain the same. If you have any questions, feel free to call.

Sincerely,

Christopher J. Maurer Environmental Engineer

CJM/cjm

cc: P. Zirngibl

William H. Bouma, Ph.D. Laboratory Director KAR Laboratories 4425 Manchester Road Kalamazoo, MI 49002

January 15, 1990

Dear Bill,

Accompanying this letter are three (3) liquid samples. They are to be analyzed for PCB. The three samples are designated as:

Orange Sample Clear Sample Blank Sample

As discussed we would like to have these analyzed within one week. Please bill the analytical work to:

James River Corporation Attn: Accounts Payable 243 E. Paterson Kalamazoo, MI 49007

The purchase order number to refer to is P.O. # 35758-D. If you have any problems or questions, give me a call. I can be reached at 383-5119.

Sincerely,

Christopher J. Maurer Environmental Engineer

CJM/cjm

cc: P. Zirngibl

JAMES RIVER CORPO PAPERUCARD PACKAGING (	GROUP For quote of Not an or	tion Thurbas order	Purchase Order Requisition						
(S Puolations 1	Shaded Areas For Purchasing Or	1	Dale 1/17/9	0 35758-	Charlett that to the many Organization of the many Organization (Aid No. 2)				
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			KAR, Labor	afory Record					
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Analys1.	s of three sau	ngles fin PCB!	5						
<b>√</b>	- Bi	lank							
		Orange Sample Clear Sample.							
	_	Clear Sample.							
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omai Delivery	nequisition		lure	Signature	Buyer's Signature				
	Date //	15/90 Date		Date	Date				

#### STATE OF MICHIGAN

#### NATURAL RESOURCES COMMISSION

AUGUST SCHOLLE

CARL T. JOHNSON E. M. LAITALA

ROBERT C. McLAUGHLIN HARRY H. WHITELEY



WILLIAM G. MILLIKEN, Governor

#### DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926

RALPH A. MAC MULLAN, Director

4056 Plainfield Avenue, N. E. Grand Rapids, Michigan 49505

May 25, 1970

Mr. Olen Loen, Engineer City of Kalamazoo 241 West South Street Kalamazoo, Michigan

Dear Mr. Loen:

On May 11, 1970, we again brought to your attention the waste discharge in the North Limits Storm Sewer. Samples taken from this flow on that date were found to contain the following:

5 day B.O.D. 190 mg/1
Suspended sollds 208 mg/1
Susp. Vol. sollds 80 mg/1
pH 7.8

Coliform bacteria 6,000,000/1.00ml Estimated flow 300 gpm

These analyses coupled with visual evidence of sanitary sewage and excessive quantities of oil identify this as a substantial source of pollution to the Kalamazoo River and must be eliminated. Our files indicate that the city was informed of similar conditions by letter dated November 26, 1968, addressed to Mr. Donald Swets.

We again request that the City of Kalamazoo investigate this matter and take the necessary action to abate the identified pollution. We would appreciate having your early comments on corrective action taken.

Very truly yours,

WATER RESOURCES COMMISSION
Chester Harvey
Basin Engineer

James R. Pope.

James L. Pope

Basin Water Quality Supervisor

JLP:as

cc: Len Pratt - Kalamazoo V Donald Swets, Kalamazoo W.R.C., Lansing



WATER RESOURCES COMMISSION

JOHN E. VOGT

STANLEY QUACKENBUSH Vice Chairman

GERALD E. EDDY

JOHN P. WOODFORD

JIM GILMORE

GEORGE F. LIDDLE

JOHN H. KITCHEL, M.D.

Kalamazoo, Michigan 49007 616-383-5000

BROWN COMPANY

January 19, 1972

Mr. Donald H. Swets Director of Public Works City of Kalamazoo Kalamazoo, Michigan

Dear Mr. Swets:

During your absence on vacation, we made arrangements with Mr. Loen for a meeting to be held in our offices Tuesday, January 25 at 10:30 a.m. to discuss the possibility of treating the waste water from our Parchment manufacturing facilities in the Kalamazoo sewage treatment plant. We trust this will be convenient as we are looking forward to the opportunity to discuss this problem with you.

As you are aware, the City of Parchment commissioned a study by the engineering firm of McNamee, Porter and Seeley to develop a plan for expansion of the City of Parchment's sewage treatment facilities. Unfortunately, when the study was commissioned, it was considered that the effluent from our Mill #2 would continue to meet state requirements, and therefore it was not included and the study was limited to the effluent from Mill #1. While there has been no change in the state requirements to date, we anticipate that in the near future some additional treatment will be necessary. As a result we came to the conclusion that we should combine the wastes from both plants, passing them through our relatively primitive primary treatment and then provide some form of secondary treatment. This could take several forms, one of which would be to pump the effluent from our primary facilities to the Kalamazoo treatment plant.

To provide you with some order of magnitude figures we have prepared the attached appendix A which gives some details of the various flows. In addition there is a flow of several million gallons per day of condenser cooling water which would not be involved in treatment. All sanitary wastes are discharged to the Parchment municipal system.

Page 2, 1/19/72 Mr. Donald H. Swets City of Kalamazoo

I shall be away from the office for the next few days, but if you have any questions regarding the data, please feel free to call Mr. Bill Zinkus who is thoroughly familiar with this.

We look forward to the meeting.

Yours sincerely,

C. M. Williams

Vice President - Engineering

CMW:bc

#### APPENDIX A

A summary of the wastewater characteristics, including average values, minimum, maximum and peak loads of the various mill effluents, is outlined below.

TABLE I
SPECIALTY PAPERS EFFLUENT CHARACTERISTICS

			Minimum		Peak
	Average M	aximum	(Operating Days)	Peak	Duration Min.
Mill #1					•
Flow-MGD	0.855	1.237	0.445	1,600	25
Suspended Solids #/Day	1030 144 pm	3800 368 PM			Fit de
BOD #/Day	320 45 "	925 90 "			~-
pH	7.2	8.3	6.0		
Mill #2					
Flow-MGD	3.884	4.730	3.115	4.861	45
Suspended Solids #/Day	590 18 pp	2700 68ppM	140 5 ppm		
BOD #/Day	1280 40ppm	2200 <sup>54</sup> "	375 🖊 🖰		~
pH	7. 1	8.0	6.3		~-
Acid Waste	•				
Flow-MGD	0.650	0.850	0.540		~-
pH	7.3	9.9	1.5		
Backwash					
Flow-MGD	0.120	0.180	0.060	2.880	5
Suspended Solids #/Day	160 itoppm	240 160 pp	M 70 35pm		<b>-</b> -
pH	7.4	8.2	6.9		
Sludge Blowdown					
Flow-MGD	0.040	0.090	0.030		
Suspended Solids #/Day	3200 7197 pm	4500 6000 pp	m 2100 3400 ppm		
pН	7.2	8.0	6.8		

The effluent characteristics for Mill #1 were computed from daily test results and averaged for the year 1971.

The effluent characteristics for Mill #2 were computed and averaged over a period of May - December, 1971. This was the period after the existing primary system was expanded to six earthen settling ponds. Generally, better suspended solids removal was experienced except for a few isolated instances when carryover occurred due to overloaded settling basins.

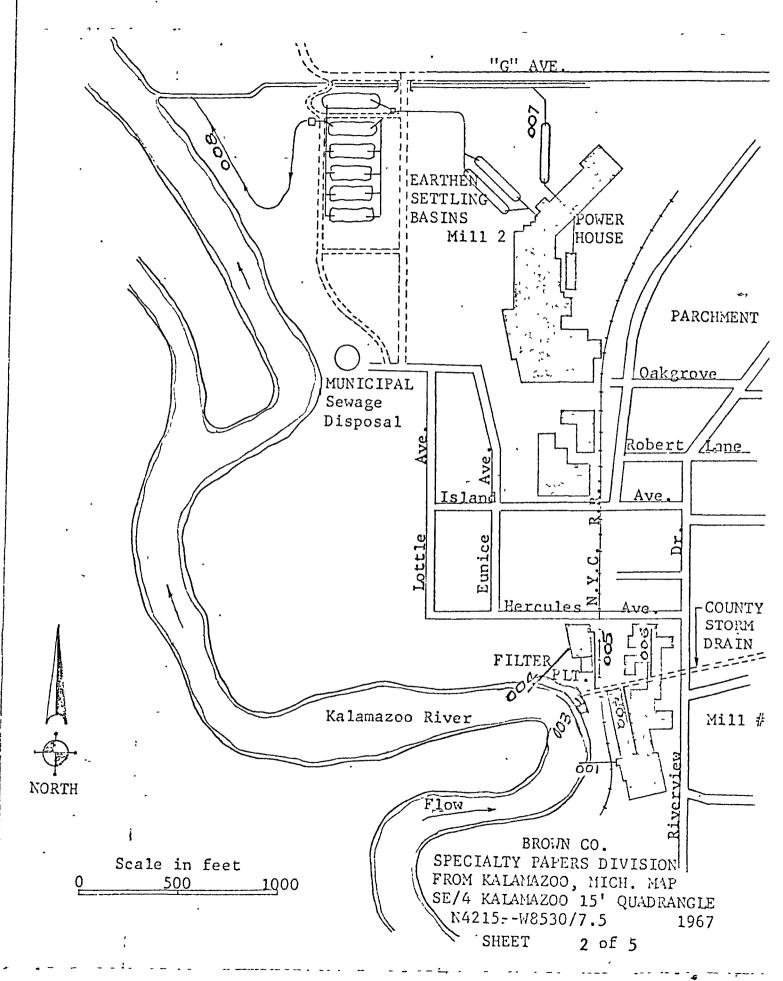
As outlined previously, it is proposed that all the effluents described will be combined and processed through the existing earthen settling ponds (primary treatment) prior to discharge to the Kalamazoo secondary treatment system. The anticipated characteristic of the effluent from the primary treatment will be as follows:

TABLE II
COMBINED PRIMARY TREATMENT EFFLUENT CHARACTERISTICS

Combined	Flow	Suspended	BOD	
Effluents	MGD	Solids #/Day	#/Day	pH
Mill #1	0.855	60 77 11	280 (32HM	7.2
Mill #2	3.884	590 18.2	1280 39.5 "	7.1
Acid Waste				
(Neutralized)	0.650	00 to 00	Ver 100 VE	6.5 - 8.8
Backwash Water	0.120	10 12000	40 TO 10	7.4
Sludge Blowdown	0.040	160 479. 0"		7.2
TOTAL	5,549	820 /7.7 "	<b>1560</b> 33.7	7. 3

Suspended solids reduction is based on the expected 95 percent solids removal normally experienced from this type of settling system.

It is not anticipated that a significant BOD reduction will be experienced from this system since the major portion of the BOD in the Mill #1 wastewater will be colloidal or in solution. In addition, there will be a small amount of BOD in the backwash water and sludge from the filter plant.



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#### DEPARTMENT OF THE ARMY

DETROIT DISTRICT. CORPS OF ENGINEERS

P. O. BOX 1027

DETROIT, MICHIGAN 48231

PUBLIC NOTICE

Date Issued
21 September 1972

NCECO-O Process No. 71176

IN REPLY REFER TO

(This notice is issued jointly by the Detroit District, Army Corps of Engineers and the Michigan Water Resources Commission concerning an application for Federal permit under the Refuse Act).

- 1. Brown Company, Specialties Paper Division, 100 Island Avenue, Kalamazoo, Michigan, has made application:
- a. To the Detroit District Corps of Engineers for a Federal permit, under Section 13 of the River and Harbor Act of 1899, to discharge into the Kalamazoo River at points located approximately between 1000 and 5000 feet downstream from the New York Central Railroad bridge as shown on the inclosed drawings. The Kalamazoo River flows into Lake Michigan.
- b. To the Michigan State Water Resources Commission for State certification, under paragraph 21 (b)(1) of PL 91-224, which is a prerequisite to the issuance of the Federal permit. The certification, if issued, is to the effect that, "there is reasonable assurance that such activity will be conducted in a manner which will not violate applicable water quality standards".
- 2. The Brown Company is engaged in manufacturing specialty paper. A summary of the Contents of the intake and discharge waters as furnished by the applicant, is inclosed. Additional information pertaining to this application is available for examination within the Detroit District Office, Corps of Engineers, located at 150 Michigan Avenue, Detroit, Michigan.
- 3. Any interested party having comments thereon should file them in writing with this office not later than 4:30 P.M., EST, 30 days from the date of issuance of this notice. Comments regarding State certification will be forwarded by this office to the State Water Resources Commission for their determination as to whether or not the State certification shall be issued.

- 4. In accordance with Federal Regulation 33 CFR 209.131, as published in the Federal Register on 7 April 1971, the decision as to whether or on what conditions a permit authorizing a discharge or deposit will or will not be issued under the Refuse Act will be based on an evaluation of the impact which the proposed discharge or deposit may have on (1) anchorage and navigation, (2) applicable water quality standards and related water quality considerations, including environmental values reflected in water quality standards and (3) fish and wildlife values not reflected in or adequately protected by applicable water quality standards, if any. Comments relative to these factors should be specific and provide supporting reasons.
- 5. Issuance of permits has been enjoined by the United States District Court from the District of Columbia, Kalur and Large v. Resor, et al, Civ No. 1331-71, 22 December 1971. Pending resolution of the legal issues involved in this case, the Government is continuing to process applications short of issuing any permit in order to facilitate the administrative effort in the event the restriction is removed.

MYRON D. SNOKE Colonel, Corps of Engineers District Engineer

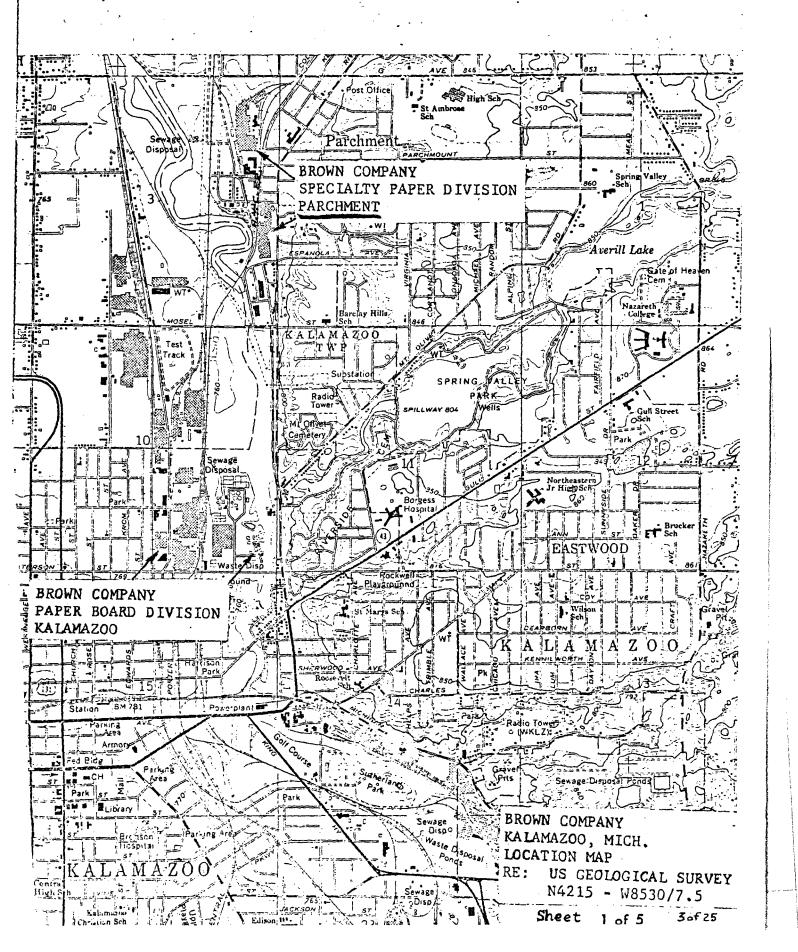
#### Notice to Postmasters:

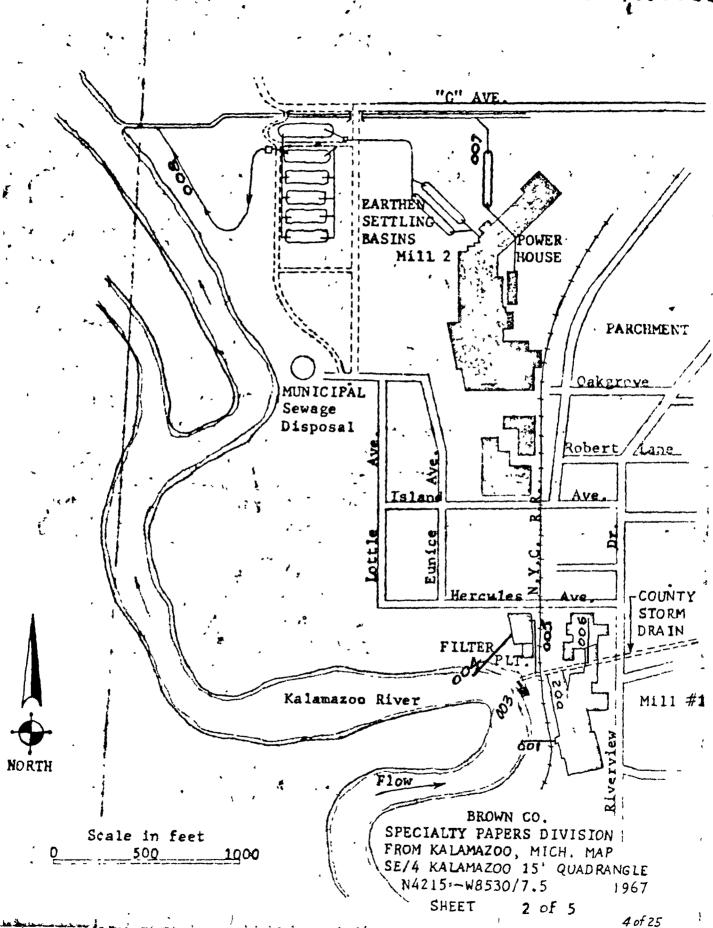
It is requested that the above notice be conspicuously and continuously posted for 30 days from the date of issuance of this notice.

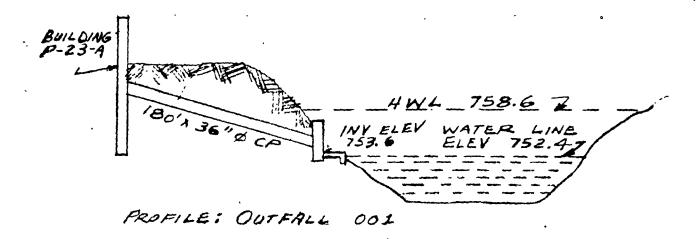
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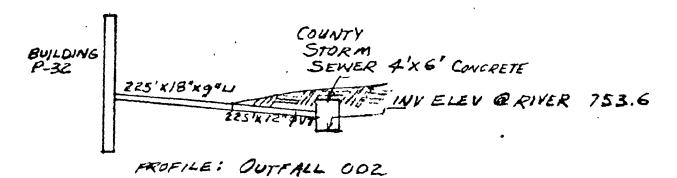
DEPT. PUBLIC WORKS
SIP 2" 1972

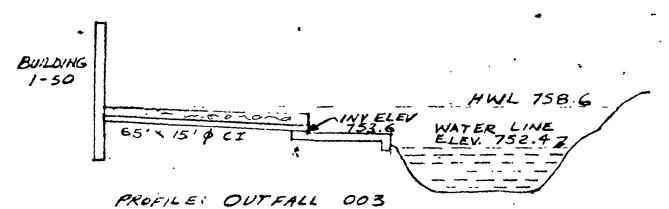
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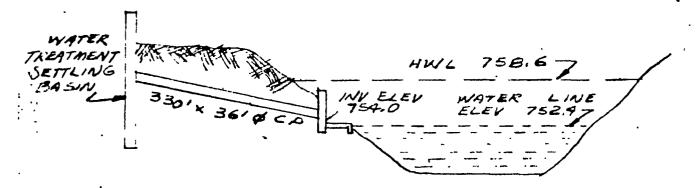




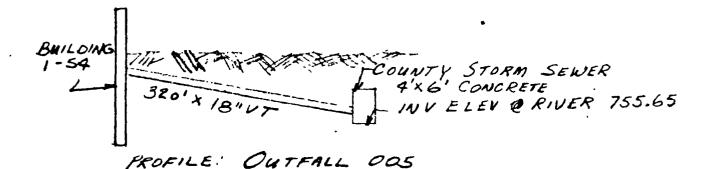


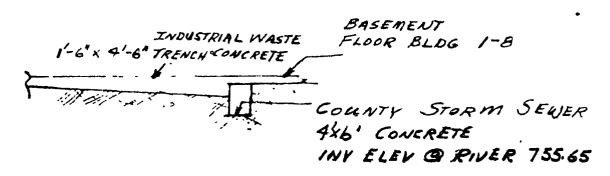
BROWN CO. SPECIALTIES PAPER DIV PARCMINENT, MICHIGAN PROFILE SHEET 3 OF 5

5of 25



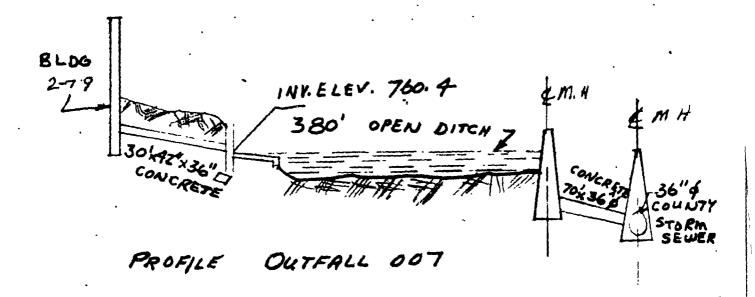
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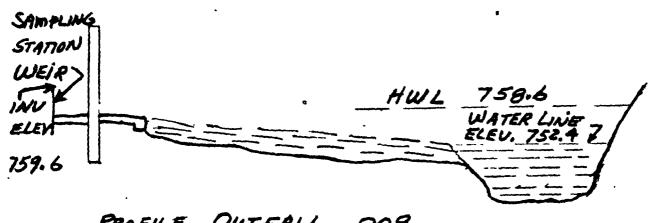




PROFILE: OUTFALL 006

BROWN CO. SPECIALTIES PAPER DIV PARCHMENT MICHIGAN PROFILE SHEET 40F5

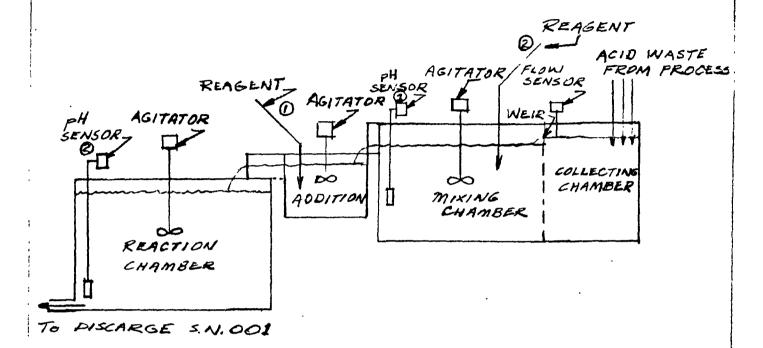




PROFILE OUTFALL

BROWN CO SPECIALTIES PAPERDIV PARCHMENT, MICHIGAN PROFILE SHEET 5 OF 5

#### ACID NEUTRALIZATION SYSTEM



#### SYSTEM OPERATION

ŧ

NORMAL - FEEDFOWARD CONTROL

- 1. SENSE PH & FLOW OF INFLUENT
- 2 COMPUTE ACID CONCENTRATION
- 3 SET FLOW REAGENT ( IN CENTER (ADDITION) MIXING TANK TO GIVE DESIRED RELEASE PH.

NORMAL - FEEDBACK CONTROL

- 1. SENSE PH OF TREATED EFFLUENT
- 2. ADJUST FLOW OF REAGENT AS NECESSARY TO MAINTAIN

#### ABNORMAL OPERATION

- 1. FEEDBACK CONTROL DEMANDS APPROACH MAXIMUM OUTPUT DUE TO ABNORMAL ACID CONDITION ABOVE CAPABILITY OF NORMAL CONTROL
- 2. SENSING RELAY SOUNDS ALARM AND ADDS REAGENT & FLOW TO PRIMARY MIXING CHAMBER BRINGING ACID CONCENTRATION TO WITHIN CONTROLLABLE LIMITS OF NORMAL OPERATION.

COMPANY: BROWN COMPANY APPLICATION NO. 070-0X5-2-71007 DISCHARGE S.N. 001 DATE: AUGUST 11, 1972 8of 25

	LICATION N 70-0X5-		007	DISCHARG	OO/	NUMBER		
	P.A	RAMETER	S OF INTAK	E WATER AND DISCHARG	3E	<del></del>	<del></del>	
PARAMETER	UNTREATED INTAKE WATER	TREATED 'INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCENT TRATION	
	Microg	UNITS rams/ Li	ter=ppb		A	UNITS s Specifi	e d	
ALUMINUM-TOTAL				COLOR (Pt-Co units)	45		20	
ANTIMONY-TOTAL				SPECIFIC CONDUCTANCE	110			
ARSENIC-TOTAL				(µmhos at 25°C.) TURBIDITY	660		12000	
BARIUM-TOTAL				(Jackson units) FECAL STREPTOCOCCI				
BERYLLIUM-TOTAL				BACTERIA number /100 m}				
BORON-TOTAL				FECAL COLIFORM BACTERIA number /100 ml				
CADMIUM-TOTAL				TOTAL COLIFORM BACTERIA	*		<b>A</b>	
CHROMIUM-TOTAL	<b>∠</b> 50		300	number /100 ml GPD ( )	A		7	
COBALT-TOTAL				FLOW MGPD (		0.70	0.40	
COPPER-TOTAL .	≥ 50		100	рН		7.2	6.8	
IRON-TOTAL	**W			Temperature (Winter) (°F)		55	85	
LEAD-TOTAL	410		300	Temperature (Summer) (°F)		55	90	
MANGANESE-TOTAL	W			Comments: Parameters reported an	re those requi	ired for		
MERCURY-TOTAL	<b>~ 1</b>		<b>~</b> 1	this industry's classi	ification.	100		
MOLYBDENUM-TOTAL				ppb means Parts Per Bi				
NICKEL-TOTAL	<b>&lt;</b> 50		150	GPD means Gallions Per				
ELENIUM-TOTAL				MGPD means Million Gal	_	,		
ILVER-TOTAL				GPH means Gallons Per	m 1 11 V L C			
ALLIUM-TOTAL								
N-TOTAL								
TANIUM-TOTAL				* An entry of "A" not present in	means the p	arameter is treated or		
IC-TOTAL	50		300	untreated intake	e and/or the means the p	discharge. resence of		
NOLS	3		6	the parameter in the result of in	n the discha nclusion in	rge is sole the intake	water.	
*** An entry of "NC" means (No Change) nothing other than heat is added to the water.								

## APPLICATION NUMBER MI-070-0X5-2-710007

DISCHARGE SERIAL NUMBER

001

	P.A	ARAMETER	S OF INTA	KE WATER AND DISCHARGI	<b>.</b>		
PARAMETER	UNTREATED INTAKE WATER	TREATED 'INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION
	Milli	UNITS grams/Lit	ter=ppm		UNITS Milligrams/Liter=ppm		
ALKALINITY (as Ca CO <sub>3</sub> )		245	90	CALCIUM-TOTAL	* * W		
B.O.D. 5-DAY		* 4	15	MAGNESIUM-TOTAL	W		
CHEMICAL OXYGEN DEMAND (C.Q.D.)		A	42	POTASSIUM-TOTAL	W		
TOTAL SOLIDS		479	1735	SODIUM-TOTAL	13		1600
TOTAL DISSOLVED SOLIDS		476	1725	OIL AND GREASE			
TOTAL SUSPENDED SOLIDS		3	10	SURFACTANTS	W		
TOTAL VOLATILE SOLIDS		216	862	ALGICIDES			
AMMONIA (as N)		A	1.0	CHLORINATED HYDRO- CARBONS* (EXCEPT PESTICIDES)			
KJELDAHL NITROGEN		A	A	- PESTICIDES		•	<u>.,.,</u>
NITRATE (as N)		A	1.5	RADIOACTIVE		UNITS	
PHOSPHORUS TOTAL (as P)		A	0.35	PARAMETERS	Picocurie/Liter		
ACIDITY (as CaCO <sub>3</sub> )				ALPHA-TOTAL			
TOTAL ORGANIC CARBON (T.O.C.)	42		360	ALPHA COUNTING ERROR	,		
TOTAL HARDNESS	**W			BETA-TOTAL			
NITRITE (as N)				BETA COUNTING ERROR			
ORGANIC NITROGEN				GAMMA-TOTAL			
PHOSPHORUS-ORTHO (as P)				GAMMA COUNTING ERROR			
SULFATE	16		2270	TRITIUM-TOTAL			
SULFIDE				TRITIUM COUNTING ERROR			
SULFITE	10		42	Comment: The applications of the comment of the com	02 and 00	6 will be	e com-
BROMIDE	0.185		0.200	bined and pumped to that Mill $\#2$ , eventually	y reaching	g the riv	rer
CHLORIDE	63		100	chrough discharge 008. They hope to have this completed by the end of the year. Also, under			
CYANIDE				consideration is a pro supply of water throug			
FLUORIDE				activating an existing materializes, discha- be inactive.	well fie	eld. If	this

	10-0X5-	1 UMBER 2 - 7/06	707	DISCHARGE SERIAL NUMBER						
	PA	RAMETER	S OF INTAK	E WATER AND DISCHA	ARGE					
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION			
	Microg	UNITS rams/ Li	ter=ppb		A	UNITS As Specified				
ALUMINUM-TOTAL				COLOR (Pt-Co units)		<u> </u>				
ANTIMONY-TOTAL				SPECIFIC CONDUCTANCE						
ARSENIC-TOTAL				(µmhos at 25°C.) TURBIDITY						
BARIUM-TOTAL				(Jackson units) FECAL STREPTOCOCCI BACTERIA						
BERYLLIUM-TOTAL				number /100 ml						
BORON-TOTAL				FECAL COLIFORM BACTERIA number /100 ml						
CADMIUM-TOTAL				TOTAL COLIFORM BACTERIA						
CHROMIUM-TOTAL	*** NC		-	number /100 ml GPD ( )						
COBALT-TOTAL				FLOW MGPD (		0.70	0.30			
COPPER-TOTAL	**			pΗ		7.4	7.4			
IRON-TOTAL	W			Temperature (Winter) (°F)		55	85			
LEAD-TOTAL				Temperature (Summer) (°F)		55	90			
MANGANESE-TOTAL	W			Comments: Parameters reported	d are those requ	ired for				
MERCURY-TOTAL				this industry's cla	assification.	•				
MOLYBDENUM-TOTAL				ppb means Parts Per Billion  ppm means Parts Per Million'  GPD means Gallions Per Day						
NICKEL-TOTAL										
SELENIUM-TOTAL				MGPD means Million Gallons Per Day  GPM means Gallons Per Minute						
SILVER-TOTAL										
THALLIUM-TOTAL										
TIN-TOTAL										
TITANIUM-TOTAL				<ul> <li>An entry of "A" means the parameter is not present in the initial treated or</li> </ul>						
ZINC-TOTAL	NC			untreated intake and/or the discharge.  ** An entry of "W" means the presence of						
PHENOLS	NC			the paramete the result o	r in the discha f inclusion in	the discharge is solely clusion in the intake water.				
				*** An entry of "NC" means (No Change) nothing other than heat is added to the water.						

#### NUMBER APPLICATION NUMBER SERIAL DISCHARGE MI-070-0X5-2-710007 002 PARAMETERS OF INTAKE WATER AND DISCHARGE UNTREATED INTAKE WATER DAILY AV. DISCHARGE CONCEN-TRATION DAILY AV. DISCHARGE CONCEN-TRATION UNTREATED INTAKE WATER TREATED INTAKE WATER TREATED INTAKE WATER PARAMETER PARAMETER UNITS UNITS Milligrams/Liter=ppm Milligrams/Liter=ppm \*\* **ALKALINITY** CALCIUM-TOTAL (as Ca CO<sub>3</sub>) 245 230 W **MAGNESIUM-TOTAL** W 5-DAY CHEMICAL OXYGEN POTASSIUM-TOTAL W DEMAND (C.O.D.) TOTAL SOLIDS SODIUM-TOTAL 479 464 TOTAL DISSOLVED OIL AND GREASE 476 459 SOLIDS TOTAL SUSPENDED SURFACTANTS SOLIDS **TOTAL VOLATILE ALGICIDES** 216 210 SOLIDS CHLORINATED HYDRO-AMMONIA (as N) CARBONS\* (EXCEPT PESTICIDES) **KJELDAHL NITROGEN PESTICIDES** NITRATE (as N) RADIOACTIVE UNITS **PHOSPHORUS TOTAL PARAMETERS** (as P) Picocurie/Liter ACIDITY (as CaCO3) ALPHA-TOTAL TOTAL ORGANIC **ALPHA COUNTING** CARBON (T.O.C.) **ERROR** BETA-TOTAL **TOTAL HARDNESS BETA COUNTING** NITRITE (as N) **ERROR ORGANIC NITROGEN GAMMA-TOTAL** PHOSPHORUS-ORTHO **GAMMA COUNTING** (as P) ERROR SULFATE TRITIUM-TOTAL NC TRITIUM COUNTING SULFIDE **ERROR** Comments: SULFITE BROMIDE CHLORIDE NC CYANIDE FLUORIDE

	. I CATION N 70 - 0X5		007	DISCHARGE SERIAL HUMBER								
	Pρ	RAMETER	S OF INTAK	E WATER AND DISCHARG	3E							
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN-					
	Microg	UNITS rams/ Li	ter=ppb		UNITS As Specified							
ALUMINUM-TOTAL	**W			COLOR (Pt-Co units)	** W							
ANTIMONY-TOTAL				SPECIFIC CONDUCTANCE								
ARSENIC-TOTAL				(µmhos at 25°C.) TURBIDITY	-	<del> </del>						
BARIUM-TOTAL				(Jackson units) FECAL STREPTOCOCCI	W	ļ						
BERYLLIUM-TOTAL				BACTERIA number /100 ml	W							
BORON-TOTAL				FECAL COLIFORM BACTERIA								
CADMIUM-TOTAL				number /100 ml TOTAL COLIFORM	- W							
CHROMIUM-TOTAL	***NC			BACTERIA number /100 ml	W							
COBALT-TOTAL				GPD.() FLOW MGPD (		12.35	0.072					
COPPER-TOTAL				рН		7.4	7.4					
IRON-TOTAL	W			Temperature (Winter) (°F)		40	40					
LEAD-TOTAL				Temperature (Summer) (°F)		80	80					
MANGANESE-TOTAL	W			Comments:	<del></del>							
MERCURY-TOTAL				Parameters reported at this industry's class	re those required in the second secon	AIFED TOF						
MOLYBDENUM-TOTAL				ppb means Parts Per B								
NICKEL-TOTAL				GPD means Gallions Per								
SELENIUM-TOTAL				MGPD means Million Ga		у						
SILVER-TOTAL				GPM means Gallons Per	Minute							
HALLIUM-TOTAL												
IN-TOTAL	1											
TANIUM-TOTAL	W			* An entry of "A" not present in	means the p	arameter is						
NC-TOTAL	NC			untreated intak  ** An entry of "W"	e and/or the	discharge.						
ENOLS	NC	,		the parameter in the result of i	n the discha	rge is sole	ly vater.					
				*** An entry of "NC other than heat	* means (No is added to	Change) noti	ning					

#### NUMBER NUMBER APPLICATION SERIAL DISCHARGE MI-070-0X5-2-710007 003 PARAMETERS OF INTAKE WATER AND DISCHARGE DAILY AV. DISCHARGE CONCEN-TRATION UNTREATED INTAKE WATER DAILY AV. DISCHARGE CONCEN-TRATION TREATED TAKE TER TREATED INTAKE WATER TREATED INTAKE WATER PARAMETER PARAMETER UNITS UNITS Milligrams/Liter=ppm Milligrams/Liter=ppm **ALKALINITY** CALCIUM-TOTAL NC 190 (as Ca CO<sub>3</sub>) B.O.D. **MAGNESIUM-TOTAL** NC 5-DAY CHEMICAL OXYGEN NC POTASSIUM-TOTAL 28 DEMAND (C.O.D.) **TOTAL SOLIDS** SODIUM-TOTAL 480 NG TOTAL DISSOLVED OIL AND GREASE NG 461 SOLIDS TOTAL SUSPENDED **SURFACTANTS** NC SOLIDS TOTAL VOLATILE **ALGICIDES** SOLIDS **CHLORINATED HYDRO-**AMMONIA (as N) NC CARBONS\* (EXCEPT PESTICIDES) KJELDAHL NITROGEN 2.6 NC **PESTICIDES** NC NITRATE (as N) 0.35 STINU RADIOACTIVE **PHOSPHORUS TOTAL** NC **PARAMETERS** Picocurie/Liter (as P) ACIDITY (as CaCO3) ALPHA-TOTAL **TOTAL ORGANIC ALPHA COUNTING** CARBON (T.O.C.) ERROR \*\* **TOTAL HARDNESS BETA-TOTAL BETA COUNTING** NITRITE (as N) FRROR **ORGANIC NITROGEN GAMMA-TOTAL** PHOSPHORUS-ORTHO **GAMMA COUNTING** (as P) **ERROR** SULFATE NC TRITIUM-TOTAL TRITIUM COUNTING SULFIDE **ERROR** Comments: SULFITE

BROMIDE

CHLORIDE

CYANIDE

FLUORIDE

NC

#### APPLICATION NUMBER DISCHARGE SERIAL NUMBER MI-070-0X5-2-710007 004 PARAMETERS OF INTAKE WATER AND DISCHARGE UNTREATED INTAKE WATER DAILY AV. DISCHARGE CONCEN-TRATION UNTREATED INTAKE WATER DAILY AV. DISCHARGE CONCEN-TRATION TREATED INTAKE WATER TREATED INTAKE WATER PARAMETER PARAMETER UNITS UNITS Micrograms/ Liter=ppb As Specified COLOR **ALUMINUM-TOTAL** 20 20 **~** 5 (Pt-Co units) W AXIMUM SPECIFIC ANTIMONY-TOTAL CONDUCTANCE (umhos at 25°C.) ARSENIC-TOTAL TURBIDITY 190 30 3 (Jackson units) MAXIMUM BARIUM-TOTAL FECAL STREPTOCOCCI BACTERIA BERYLLIUM-TOTAL number /100 ml FECAL COLIFORM **BORON-TOTAL** BACTERIA number /100 ml CADMIUM-TOTAL **TOTAL COLIFORM** BACTERIA 650 number /100 ml CHROMIUM-TOTAL **4** 50 < 50 MAXIMUM GPD ( ) See FLOW MGPD ( NOTE COBALT-TOTAL 1.0 1.0 #1 GPM ( ) 71 MAXIMUM COPPER-TOTAL pН 7.6 6.9 MINIMU Temperature (Winter) (°F) IRON-TOTAL 40 MAXIMUM W 34 MINIMUM LEAD-TOTAL Temperature 85 MAXIMUM (Summer) (°F) 85 78 MINIMUM MANGANESE-TOTAL Common ts: Parameters reported are those required for this industry's classification. MERCURY-TOTAL ppb means Parts Per Billion **MOLYBDENUM-TOTAL** ppm means Parts Per Million **NICKEL-TOTAL** GPD means Gallions Per Day MGPD means Million Gallons Per Day SELENIUM-TOTAL GPM means Gallons Per Minute SILVER-TOTAL NOTE #1: ONE (1) DISCHARGE EVERY THALLIUM-TOTAL FIVE WEEKS OF 1,000,000 GALLONS. TIN-TOTAL TITANIUM-TOTAL An entry of "A" means the parameter is not present in the initial treated or untreated intake and/or the discharge. 400 ZINC-TOTAL 50 100 MAXIMUM An entry of "W" means the presence of \*\* the parameter in the discharge is solely the result of inclusion in the intake water. 25 **PHENOLS** 31 44 MAXIMUM An entry of "NC" means (No Change) nothing other than heat is added to the water.

#### APPLICATION NUMBER NUMBER DISCHARGE SERIAL MI-070-0X5-2-710007 004 PARAMETERS OF INTAKE WATER AND DISCHARGE UNTREATED Intake Water DAILY AV. DISCHARGE CONCEN-TRATION DAILY AV. DISCHARGE CONCEN-TRATION ITREATED ITAKE VTER TREATED INTAKE WATER TREATED INTAKE WATER PARAMETER PARAMETER X Z Z UNITS UNITS Milligrams/Liter=ppm Milligrams/Liter=ppm **ALKALINITY CALCIUM-TOTAL** (as Ca CO<sub>3</sub>) 190 170 170 B.O.D. **MAGNESIUM-TOTAL** 3 CHEMICAL OXYGEN POTASSIUM-TOTAL 5 28 W DEMAND (C.O.D.) 10 **TOTAL SOLIDS** SODIUM-TOTAL 525 480 1105 W **TOTAL DISSOLVED** OIL AND GREASE 525 525 461 SOLIDS **TOTAL SUSPENDED SURFACTANTS** 19 0 480 SOLIDS TOTAL VOLATILE **ALGICIDES** 256 256 252 SOLIDS CHLORINATED HYDRO-AMMONIA (as N) 0.5 0 **CARBONS\* (EXCEPT** PESTICIDES) KJELDAHL NITROGEN 2.6 0 **PESTICIDES** NITRATE (as N) 0 0.35 0 UNITS RADIOACTIVE **PHOSPHORUS TOTAL** 0.3 **PARAMETERS** 0.7 0.1 Picocurie/Liter (as P) ACIDITY (as CaCO3) **ALPHA-TOTAL TOTAL ORGANIC** ALPHA COUNTING CARBON (T.O.C.) ERROR \* \* **TOTAL HARDNESS BETA-TOTAL BETA COUNTING** NITRITE (as N) ERROR **ORGANIC NITROGEN** GAMMA-TOTAL PHOSPHORUS-ORTHO **GAMMA COUNTING** (as F) **ERROR** 38 SULFATE TRITIUM-TOTAL 26 42. MAXIMUM TRITIUM COUNTING SULFIDE ERROR

Comments:

65

MAXIMUM

45

61

SULFITE

BROMIDE

CHLORIDE

CYANIDE

FLUORIDE

#### APPLICATION NUMBER DISCHARGE SERIAL NUMBER MI-070-0X5-2-710007 005 PARAMETERS OF INTAKE WATER AND DISCHARGE UNTREATED INTAKE WATER UNTREATED INTAKE WATER DAILY AV. DISCHARGE CONCEN-TRATION DAILY AV. DISCHARGE CONCEN-TRATION TREATED INTAKE WATER TREATED INTAKE WATER PARAMETER PARAMETER UNITS UNITS Micrograms/ Liter=ppb As Specified COLOR ALUMINUM-TOTAL **4**5 20 (Pt-Co units) 20 SPECIFIC ANTIMONY-TOTAL CONDUCTANCE (umhos at 25°C) ARSENIC-TOTAL TURBIDITY 3 30 105 (Jackson units) BARIUM-TOTAL FECAL STREPTOCOCCI BACTERIA **BERYLLIUM-TOTAL** number /100 ml FECAL COLIFORM **BORON-TOTAL** BACTERIA number /100 ml CADMIUM-TOTAL **TOTAL COLIFORM** BACTERIA number /100 ml CHROMIUM-TOTAL **4** 50 **450** 650 GPD ( ) FLOW MGPD (1 COBALT-TOTAL 5.4 5.4 0.40 GPM ( ) COPPER-TOTAL рH 7.2 7.1 7.1 Temperature (Winter) (°F) **IRON-TOTAL** W 40 40 40 LEAD-TOTAL Temperature (Summer) (°F) 80 80 80 MANGANESE-TOTAL Comments: W Parameters reported are those required for this industry's classification. MERCURY-TOTAL ppb means Parts Per Billion MOLYBDENUM-TOTAL ppm means Parts Per Million NICKEL-TOTAL GPD means Gallions Per Day MGPD means Million Gallons Per Day SELENIUM-TOTAL GPM means Gallons Per Minute SILVER-TOTAL THALLIUM-TOTAL TIN-TOTAL An entry of "A" means the parameter is not present in the initial treated or untreated intake and/or the discharge. TITANIUM-TOTAL ZINC-TOTAL 400 50 100 An entry of "W" means the presence of the parameter in the discharge is solely the result of inclusion in the intake water. **PHENOLS** 44 31 25 An entry of "NC" means (No Change) nothing other than heat is added to the water. \*\*\*

## APPLICATION NUMBER MI-070-0X5-Z-710007

DISCHARGE SERIAL NUMBER

005

				_ <u></u>		<del></del>				
	PA	RAMETER	S OF INTAK	E WATER AND DISCHARG	E					
PARAMETER	UNTREATED INTAKE WATER	TREATED 'INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION			
	Millig	UNITS grams/Lit	e i = b b w		Milli	UNITS Milligrams/Lit				
ALKALINITY (as Ca CO <sub>3</sub> )	190	170	170	CALCIUM-TOTAL	**					
B.O.D. 5-DAY	5		2	MAGNESIUM-TOTAL	W					
CHEMICAL OXYGEN DEMAND (C.O.D.)	28	5	8	POTASSIUM-TOTAL	W					
TOTAL SOLIDS	480	525	560	SODIUM-TOTAL	W					
TOTAL DISSOLVED SOLIDS	461	525	525	OIL AND GREASE						
TOTAL SUSPENDED SOLIDS	19	0	35	SURFACTANTS		, , , , , , , , , , , , , , , , , , ,				
TOTAL VOLATILE SOLIDS	252	256	260	ALGICIDES						
AMMONIA (as N)	0.5	0	0	CHLORINATED HYDRO- CARBONS* (EXCEPT PESTICIDES)						
KJELDAHL NITROGEN	2.6	0	0	PESTICIDES			:			
NITRATE (as N)	0.35	0	0	RADIOACTIVE		UNITS				
PHOSPHORUS TOTAL (as P)	0.7	0.1	0.15	PARAMETERS	Pic	ocurie/L	iter			
ACIDITY (as CaCO <sub>3</sub> )				ALPHA-TOTAL						
TOTAL ORGANIC CARBON (T.O.C.)				ALPHA COUNTING ERROR						
TOTAL HARDNESS	**W			BETA-TOTAL						
NITRITE (as N)				BETA COUNTING ERROR						
ORGANIC NITROGEN				GAMMA-TOTAL						
PHOSPHORUS-ORTHO (as P)				GAMMA COUNTING ERROR						
SULFATE	26	42	38	TRITIUM-TOTAL						
SULFIDE				TRITIUM COUNTING ERROR						
SULFITE				Comments:						
BROMIDE										
CHLORIDE	45	61	65							
CYANIDE										
FLUORIDE "					<b>!</b> _					
				<del></del>	,		C 2 5			

	LICATION 70-0X5	NUMB - 2-7/	0007	DISCHARG. SERIAL NUMBER							
	P	ARAMETER	S OF INTAK	E WATER AND DISCHARG	i E						
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION				
	Micro	UNITS grams/ Li	ter=ppb		As	UNITS Specifi	e d				
ALUMINUM-TOTAL	* * W			COLOR (Pt-Co units)	20	5	15				
ANTIMONY-TOTAL				SPECIFIC CONDUCTANCE							
ARSENIC-TOTAL				(µmhos at 25°C)	590	700	850				
BARIUM-TOTAL		<del>                                     </del>		(Jackson units) FECAL STREPTOCOCCI	30	3	60				
BERYLLIUM-TOTAL		<del> </del>	<del> </del>	BACTERIA							
BORON-TOTAL				FECAL COLIFORM BACTERIA							
CADMIUM-TOTAL				number /100 ml TOTAL COLIFORM	-	*	*				
CHROMIUM-TOTAL	< 50	<50	<b>450</b>	BACTERIA number /100 ml	4600	A	A				
COBALT-TOTAL				GPD ( ) FLOW MGPD ( ) GPM ( )	5.4	5.4	0.8				
COPPER-TOTAL	450	450	450	рН	7.6	7.4	7.2				
IRON-TOTAL	**			Temperature (Winter) (°F)	34	34	70				
LEAD-TOTAL	210	410	410	Temperature (Summer) (°F)	85	85	82				
MANGANESE-TOTAL				Comments:							
MERCURY-TOTAL	41	41	41	Parameters reported an this industry's classi		ired for					
MOLYBDENUM-TOTAL				ppb means Parts Per Bi							
NICKEL-TOTAL	50	50	50	GPD means Gallions Per	-						
SELENIUM-TOTAL				MGPD means Million Gal	-	•					
SILVER-TOTAL				Grm means Gallons Per	riiute						
THALLIUM-TOTAL											
TIN-TOTAL											
TITANIUM-TOTAL	**W			* An entry of "A" not present in	the initial :	treated or					
ZINC-TOTAL	100	50	150	untreated intake	e and/or the	discharge.					
HENOLS	44	31	25	the parameter in	n the dischar	rne is solel	y vater.				
				*** An entry of "NC" other than heat	means (No (	Change) noth the water.	ing				

## APPLICATION NUMBER MI-070-0X5-2-7/0007

DISCHARGE SERIAL NUMBER

006

#### PARAMETERS OF INTAKE WATER AND DISCHARGE

	P/	ARAMETER	S OF INTAK	E WATER AND DISCHARG	3E		·		
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CON CEN- TRATION		
	Milli	UNITS grams/Lit	er=ppm		Milli	UNITS grams/Li	ter=ppm		
ALKALINITY (as Ca CO <sub>3</sub> )	190	170	170	CALCIUM-TOTAL	* * W				
B.O.D. 5-DAY	5		20	MAGNESIUM-TOTAL	* *W				
CHEMICAL OXYGEN DEMAND (C.O.D.)	28	5	107	POTASSIUM-TOTAL	* *W				
TOTAL SOLIDS	480	525	750	SODIUM-TOTAL	40	44	66		
TOTAL DISSOLVED SOLIDS	461	525	695	OIL AND GREASE	* * W				
TOTAL SUSPENDED SOLIDS	19	0	75	SURFACTANTS	**W				
TOTAL VOLATILE SOLIDS	252	256	305	ALGICIDES					
AMMONIA (as N)	0.5	0	* 🛧	CHLORINATED HYDRO- CARBONS* (EXCEPT PESTICIDES)	**				
KJELDAHL NITROGEN	2.6	0	30	PESTICIDES	W				
NITRATE (as N)	0.35	0	0.5	RADIOACTIVE	<u> </u>	STINU			
PHOSPHORUS TOTAL (as P)	0.7	0.1	**	PARAMETERS	Pic	ocuris/L	iter		
ACIDITY (as CaCO <sub>3</sub> )				ALPHA-TOTAL					
TOTAL ORGANIC CARBON (T.O.C.)	21	48	97	ALPHA COUNTING ERROR					
TOTAL HARDNESS	** W			BETA-TOTAL					
NITRITE (as N)				BETA COUNTING ERROR .					
ORGANIC NITROGEN	2.6	1.2	6.0	GAMMA-TOTAL					
PHOSPHORUS-ORTHO (as P)				GAMMA COUNTING ERROR					
SULFATE	26	42	90	TRITIUM-TOTAL					
SULFIDE				TRITIUM COUNTING ERROR					
SULFITE	42	42	<b>42</b>	Comments:					
BROMIDE	0.145	0.135	0.150						
CHLORIDE	45	61	60						
CYANIDE									
FLUORIDE 3									
					<u></u>		0. 605		

#### APPLICATION NUML DISCHARG SERIAL NUMBER MI-070-0X5-2-710007 007 PARAMETERS OF INTAKE WATER AND DISCHARGE UNTREATED INTAKE WATER DAILY AV. DISCHARGE CONCEN-TRATION UNTREATED Intake Water DAILY AV. DISCHARGE CONCEN-TRATION TREATED INTAKE WATER TREATED INTAKE WATER PARAMETER PARAMETER UNITS STINU Micrograms/ Liter=ppb As Specified \* \* COLOR **ALUMINUM-TOTAL** (Pt-Co units) W SPECIFIC ANTIMONY-TOTAL CONDUCTANCE (jumhos at 25°C.) ARSENIC-TOTAL TURBIDITY W (Jackson units) BARIUM-TOTAL **FECAL STREPTOCOCCI** BACTERIA BERYLLIUM-TOTAL number /100 ml FECAL COLIFORM **BORON-TOTAL BACTERIA** W number /100 ml CADMIUM-TOTAL **TOTAL COLIFORM** BACTERIA CHROMIUM-TOTAL number /100 ml NC GPD ( ) FLOW MGPD 1 COBALT-TOTAL 7.0 7.0 GPM ( ) COPPER-TOTAL ρН 7.4 Temperature (Winter) (°F) IRON-TOTAL W 45 34 **LEAD-TOTAL** 80 (Summer) (°F) 100 MANGANESE-TOTAL Comments: W Parameters reported are those required for this industry's classification. MERCURY-TOTAL ppb means Parts Per Billion MOLYBDENUM-TOTAL ppm means Parts Per Million NICKEL-TOTAL GPD means Gallions Per Day MGPD means Million Gallons Per Day SELENIUM-TOTAL GPM means Gallons Per Minute SILVER-TOTAL THALLIUM-TOTAL TIN-TOTAL An entry of "A" means the parameter is not present in the initial treated or TITANIUM-TOTAL untreated intake and/or the discharge. ZINC-TOTAL An entry of "W" means the presence of the parameter in the discharge is solely the result of inclusion in the intake water. HENOLS NC

An entry of "NC" means (No Change) nothing other than heat is added to the water.

MI-07	CATION N	UMBER - 2 - 710	007	DISCHARGE	SERIAL 007	NUMBER	
	P#	RAMETERS	S OF INTAK	E WATER AND DISCHARG	E		
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION
	Milli	UNITS grams/Lit	er=ppm		Milli	UNITS grams/Lit	e r = p p m
ALKALINITY (as Ca CO <sub>3</sub> )		190	* * *	CALCIUM-TOTAL	* *W		
^B.O.D. 5-DAY	,	5	NC	MAGNESIUM-TOTAL	W		
CHEMICAL OXYGEN DEMAND (C.O.D.)		28	NC	POTASSIUM-TOTAL	W		
TOTAL SOLIDS		480	NC	SODIUM-TOTAL	W		
TOTAL DISSOLVED SOLIDS		461	NC	OIL AND GREASE	W		
TOTAL SUSPENDED SOLIDS		19	NC	SURFACTANTS	W		
TOTAL VOLATILE SOLIDS		252	NC	ALGICIDES			
AMMONIA (as N)		0.5	NC	CHLORINATED HYDRO- CARBONS* (EXCEPT PESTICIDES)	1.7		
KJELDAHL NITROGEN		2.6	NC	PESTICIDES	W		· · · · · · · · · · · · · · · · · · ·
NITRATE (as N)		0.35	NC	RADIOACTIVE	I VY	UNITS	
PHOSPHORUS TOTAL (as P)		0.7	NC	PARAMETERS	Pic	ocurie/L	iter
ACIDITY (as CaCO <sub>3</sub> )				ALPHA-TOTAL			
TOTAL ORGANIC CARBON (T.O.C.)				ALPHA COUNTING ERROR			
TOTAL HARDNESS	**W			BETA-TOTAL			
NITRITE (as N)	W			BETA COUNTING ERROR .			
ORGANIC NITROGEN	W			GAMMA-TOTAL			
PHOSPHORUS-ORTHO (as P)				GAMMA COUNTING ERROR			
SULFATE	NC	-		TRITIUM-TOTAL			
SULFIDE	W			TRITIUM COUNTING ERROR			
SULFITE	W			Comments:			
BROMIDE							
CHLORIDE	NC						
CYANIDE	W						
FLUORIDE	W				,		

	. I CATION 10 - 0X5	NUMBER - <b>2-7</b> 100	707	DISCHARG	OOB	NUMBER	
	P	ARAMETER	S OF INTAK	E WATER AND DISCHAR	GE		
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION
	Micro	UNITS grams/ Li	ter=ppb		As	UNITS Specifi	ed
ALUMINUM-TOTAL	** W			COLOR (Pt-Co units)	20	45	15
ANTIMONY-TOTAL				SPECIFIC CONDUCTANCE			
ARSENIC-TOTAL				(µmhos at 25°C.) TURBIDITY	590	700	<u>810</u> 55
BARIUM-TOTAL				(Jackson units) FECAL STREPTOCOCCI BACTERIA	30	3	33
BERYLLIUM-TOTAL				number /100 ml			
BORON-TOTAL				FECAL COLIFORM BACTERIA number /100 ml			
CADMIUM-TOTAL				TOTAL COLIFORM BACTERIA	44.	*	45.
CHROMIUM-TOTAL	< 50	<b>450</b>	<b>&lt;50</b>	number /100 m} GPD ( )	4600	A	430
COBALT-TOTAL				FLOW MGPD (	5.4	5.4	4.2
COPPER-TOTAL	< 50	<50	< 50	Нq	7.6	7.4	7.2
IRON-TOTAL	* * W			Temperature (Winter) (°F)	34	34	70
LEAD-TOTAL	< 10	210	Z10	Temperature (Summer) (°F)	85	85	82
MANGANESE-TOTAL				Comments:  Parameters reported a	re those requ	ired for	
MERCURY-TOTAL	< 1	41	41	this industry's class	ification.		
MOLYBDENUM-TOTAL				ppb means Parts Per B			
NICKEL-TOTAL	50	50	50	GPD means Gallions Pe	r Day		
SELENIUM-TOTAL				MGPD means Million Ga GPM means Gallons Per	•		
SILVER-TOTAL							
THALLIUM-TOTAL							
TIN-TOTAL							
TITANIUM-TOTAL	**W			* An entry of "A" not present in	the initial t	reated or	
ZINC-TOTAL	100	50	100	untreated intak		discharge.	

31

44

44

**PHENOLS** 

An entry of "W" means the presence of the parameter in the discharge is solely the result of inclusion in the intake water.

An entry of "NC" means (No Change) nothing other than heat is added to the water.

	1 CATION N	3-7100	07	DISCHARGE	SERIAL 008	NUMBER					
	P	ARAMETER	S OF INTAK	E WATER AND DISCHARG	E						
PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION	PARAMETER	UNTREATED INTAKE WATER	TREATED INTAKE WATER	DAILY AV. DISCHARGE CONCEN- TRATION				
	Milli	UNITS grams/Li	ter=ppm		UNITS Milligrams/Liter=ppm						
ALKALINITY (as Ca CO <sub>3</sub> )	190	170	165	CALCIUM-TOTAL	* * W						
B.O.D. 5-DAY	5	1	35	MAGNESIUM-TOTAL	W						
CHEMICAL OXYGEN DEMAND (C.O.D.)	28	5	90	POTASSIUM-TOTAL	W						
TOTAL SOLIDS	480	525	650	SODIUM-TOTAL	40	44	54				
TOTAL DISSOLVED SOLIDS	461	525	635	OIL AND GREASE	W						
TOTAL SUSPENDED SOLIDS	1.9	0	15	SURFACTANTS	W						
TOTAL VOLATILE SOLIDS	252	256	270	ALGICIDES	W						
AMMONIA (as N)	0.5	0	* A	CHLORINATED HYDRO- CARBONS* (EXCEPT PESTICIDES)	W						
KJELDAHL NITROGEN	2.6	0	3.3	PESTICIDES	<b></b>						
NITRATE (as N)	0.35	0	0.4	RADIOACTIVE		UNITS					
PHOSPHORUS TOTAL (as P)	0.7	0.1	* <i>A</i>	PARAMETERS	Pic	ocurie/F	iter				
ACIDITY (as CaCO <sub>3</sub> )				ALPHA-TOTAL							
TOTAL ORGANIC CARBON (T.O.C.)	21	48	90	ALPHA COUNTING ERROR							
TOTAL HARDNESS	**W			BETA-TOTAL							
NITRITE (as N)				BETA COUNTING ERROR							
ORGANIC NITROGEN	2.6	1.2	3.8	GAMMA-TOTAL		_					
PHOSPHORUS-ORTHO (as P)				GAMMA COUNTING ERROR							
SULFATE	26	42	80	TRITIUM-TOTAL							
SULFIDE				TRITIUM COUNTING ERROR							
SULFITE	2	2	2	Comments:							
BROMIDE	0.145	0./35	0.190								
CHLORIDE	45	61	58								
CYANIDE											
FLUORIDE			į								



### 

DATE 16 August 1974

TO FILE

FROM C. M. Williams

SUBJECT SECONDARY FIBER PROJECT WASTE TREATMENT DATA

Approximate present discharge to Kalamazoo Treatment Plant:

4.3 MGD 14,000 lbs/day suspended solids 4,760 " " BOD

Estimated future discharge:

4.5 MGD 6000 lbs/day suspended solids 7000 lbs/day BOD

Without chemical addition in the Brown Company primary clarifier, the estimated BOD discharge to the City of Kalamazoo treatment plant would be approximately 12,000 lbs./day.

C. M. Williams

26 August 1974

Mr. Donald H. Swets, P.E. Director of Public Works City of Kalamazoo 241 West South Street Kalamazoo, Michigan 49006

Dear Mr. Swets:

Subject: Brown Company Secondary Fiber Plant
Waste Water Treatment

This is to follow up and confirm the matters discussed with you August 16th.

To challenge the severe shortage of new or virgin wood pulp fiber which has developed in the past two years, and to establish new sources of raw materials for our papermaking operations, Brown Company is undertaking a project which will dramatically increase the use of recycled paper. Presently we use in Kalamazoo about 300 tons per day. On completion of the new plant, this will increase to over 550 tons per day.

The project involves new and improved processes which will make it possible to use grades of wastepaper which, in the past, have been considered unsuitable for recycling because of quality variability. By innovative processing, it will be possible to convert these lower grades of waste into a premium quality raw material for our papermaking facilities.

Through this new operation Brown Company expects to reduce its dependence on remote and/or foreign sources of raw materials to a major degree. In addition, this program results in a substantial increase in the recycling of grades of paper fiber which, in the past, have ended up in municipal waste, and it also involves a commensurate saving of this nation's natural forest resources.

The new plant will be located within our East Paterson Street complex and is expected to provide employment for approximately 40 persons.

BROWN COMPANY Page 2.

To: Mr. D. H. Swets, P.E.

From: C. M. Williams

Subj: Secondary Fiber Plant Waste Water Treatment

Date: 26 August 1974

The new processes involve pulping the waste paper into a water slurry, followed by a primary cleaning. This pulp slurry will then be washed to separate pulp fibers from fillers and coatings. The pulp will then be re-screened and cleaned in several stages, followed by a bleaching process. The finished pulp will be formed into a sheet and lapped for transfer to our papermaking plant at Parchment, or used directly on the machines at East Paterson Street as raw material.

As is the case in most papermaking operations, these are wet processes and require both a supply of water and effluent treatment facilities. To keep total water consumption within the capacity of our well-field and to optimize the operation of the available wastewater treatment system, two important design concepts have been followed. The new plant will take maximum advantage of internal cleaning and recycling of process water and will use much less fresh water than conventional recycling systems. Secondly, to make available a supply of water and to provide effluent treatment from existing facilities, changes will be made to the existing recycled paperboard mill to increase internal reuse of water and fiber. A 50% reduction in water use is expected at the existing plant, while useable fiber will be recovered internally rather than being recovered at the company's primary treatment works.

To minimize the need for waste water treatment for the new plant, the process equipment is, wherever possible, designed to concentrate reject materials in a solid form suitable for disposal on landfill. Liquid effluent will be mixed with the effluent from the existing mill and given primary treatment at the company's 100 foot clarifier prior to discharge to the city's industrial sewer. As the solids removed from the mixed effluents will be unsuitable for papermaking, new sludge filters are included in the project. This sludge will also be disposed of on landfill. As these materials will be basically clays and other fillers, they should not introduce serious odor or other related disposal problems.

The new sludge filters are patterned on a similar installation at our Eau Claire, Wisconsin mill which uses similar waste paper as raw material. That sludge recovery plant was designed for a high

To: D. H. Swets, P.E.

From: C. M. Williams

Subj: Secondary Fiber Plant Waste Water Treatment

Date: 26 August 1974

degree of recovery of suspended solids and in so doing is removing a significant fraction of the BOD. Similar results are expected here.

The purpose of our visit to your office was to advise you of these plans and to discuss with you any problems which our project might generate in the City Treatment Plant.

Attached is a table indicating what we believe will be the net effect on our effluent.

On the positive side, our plan proposes approximately the same total daily hydraulic flow. Incidentally, this is much lower than the flow which was the case before we removed our #1 and #2 board machines some years ago. Also, on the positive side will be a very marked decrease in the suspended solids load now introduced into the city's secondary system. On the other hand, there will be a definite increase in the biochemical oxygen demand exerted by our waste water.

At this time we need from the city an indication of the ability of the city's plant to handle this waste without unduly affecting the discharge to the Kalamazoo River. We understand you will review this with the Michigan Water Resources Commission and will advise us as soon as possible of your findings.

We are prepared to discuss these plans with you. We assure you that we shall make every effort to control our discharge in a manner which will optimize the operation of the city's works.

In our discussion you asked what backup existed for our 100 ft. clarifier. For short interruptions there is considerable capacity in the drainage ditch between our manufacturing plant and the clarifier. In addition, we will no longer need the existing sludge pits for sludge dewatering and will arrange these as additional holding and settling capacity. In the event that these prove inadequate, we would have no alternative but to shut down our operations unless events prove that the Kalamazoo plant could handle all or part of our waste on a short term basis.

To:

D. H. Swets, P.E.

From:

C. M. Williams

Subj:

Secondary Fiber Plant Waste Water Treatment

Date:

26 August 1974

If you have further questions, please let us know. We appreciated the cordial reception accorded us and look forward to your formal reply.

Yours very truly,

C. M. Williams

Vice President - Engineering

Attachment

CMW/vs

PEPT. PUBLIC WORKS

AUG 28 1974

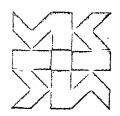
RECEIVED CITY OF

#### BROWN COMPANY SECONDARY FIBER PROJECT WASTE WATER TREATMENT DATA

Estimated waste water loads to company and municipal treatment are listed below. The data are based on our own tests, experience elsewhere with similar processes, and anticipated performance of (1) the Secondary Fiber Plant, (2) Close-ups of the Recycled Paperboard Division, and (3) improvements at the company's primary treatment facilities.

#### TABLE I

	_		
	Flow	Suspended	BOD <sub>5</sub>
	MGD	Solids Lbs./Day	Lbs./Day
Present discharge to City	4.1	11,500	4,000
Proposed discharge to Brown Co.Primary:			
A. Recycled Paperboard	2.0	6,500	3,000
B. Secondary Fiber Plant	2.0	55,000	16,500
TOTAL	4.0	61,500	19,500
Removed in Primary To City Secondary	4.0	55,400 6,100	11,700 7,800
Net Change	- <u>0.1</u>	<u>-5,400</u>	+3,800



#### CITY OF KALAMAZOO, MICHIGAN

November 27, 1978

Brown Company 243 E. Paterson Street Kalamazoo, Michigan 49007

Attention: Mr. Joe Chadderdon

Dear Joe:

Thank you for your offer of laboratory assistance to support our storm water analyses program in the area. We will anticipate forwarding samples to you for analysis of PCBs. I have notified our Chemist, Mr. Kenneth Leanin as he is familiar with your facilities, and will make the arrangements for dropping off samples in the future.

We appreciate your assistance in this regard.

Yours truly,

Richard G. Simms, P.E.,

Wastewater Superintendent

Richard M. June

RGS:pd

cc: D. Swets

File



November 19, 1984

Mr. Richard G. Simms, P. E. Superintendent Wastewater Treatment 1415 N. Harrison Street Kalamazoo, Michigan 49007

Dear Mr. Simms:

This letter is in reference to our industrial pretreatment facilities. As we had previously indicated, we are intending on rebuilding our clarifier due to the fact that many of the mechanical parts are badly worn and need replacing. Since the clarifier is a single unit, it will be necessary to bypass this unit during the rebuild which should not exceed two weeks. Originally, we had talked about making some piping modifications both at the location of the primary sludge pumps and at our plant that would allow return of a portion of the sludge generated from your primary clarifiers to our facility for dewatering.

As you had indicated previously, one of your prerequisites for approval of the project was to submit the project to MDNR for their approval. Consequently, the project was discussed with their district and head-quarters staff. As a result, they determined that our sludge holding lagoons needed to be permitted under the Act 245 Groundwater Discharge Permit System. Furthermore, it was then necessary to do a hydrogeological study of the site to determine groundwater impact.

The permit application and hydrogeological study has been submitted to MDNR for review and approval. Among their review comments, is an apparent concern for receiving sludge at our site that is a mixture of both ours and Georgia Pacific's.

To date we've answered the review comments but there is still no indication as to when or if the permit will be issued.

Out of a growing concern as to whether or not the permit will be issued in time to install the emergency bypass system, we would like to propose an alternative plan. Over the past several months, our flow quantity and characteristics have changed substantially. This is due in part to increased water conservation measures as well as process modifications. Since March of 1984 our flows to the City WWTP have dropped from a 1983 average of 2.2 mgd to about 0.9 mgd. Also, our suspended solids concentration has dropped from a 1983 average of 158 mg/l (2899 lbs/day) to about 81 mg/l (608 lbs/day). We are also returning about 1.8 - 2.0 mgd of the clarifier effuent to the process. During the

R. G. Simms, P.E. 11-19-84 Page Two

clarifier rebuild this flow would also be bypassed as well. Therefore, the total flow that would be discharged directly to the treatment plant would be about 3 mgd. During most of 1984 our sludge characteristics have also changed from historical quantities. We estimate that our sludge production has decreased by a factor of about two. However, we will, of course substantiate this since it will be of primary importance to you.

In essence, we feel that since our total wastewater production has dropped over the past year it may appear that the City's wastewater treatment facility may be able to handle a direct bypass over a relatively short time period. We would like to pursue this alternative with you further. Please let me know at your earliest convenience when we could meet to discuss this option further.

Very truly yours,

Michael C. Wetzel

Environmental Coordinator

MW:m

cc: M. Heckelman

# AMES KILLENT PLANT D.O. & B.O.D.

EST	SAMPLE		BOTT.	D.O.	DEPLE	TEST	AVE.	DAYS	FAC.	MG./L.	REMARKS
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	I.D.# . 900	5	115	8.5	1.4	{	570				Sample Date: 4-16-85
	10:1 dila	10	48	0.5%	1.9	570					Sample Ran: 4-17-50
	1. 000										Due Date: 4-22-85
											Analyst: 1902/1300
7	BLANK (Seeded)	0						5	1.000		
	I.D.# 15		3 ⋜	8.6	1,0		690				Sample Date:
	10;1 dila	10	517	8.6	2-3	690					Sample Pan:
1			63	27							Due Date:
	•		, 'V								Analyst:
7	BLANK (Soeded)	0						5	(.000		
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7	BLANK (Seeded)	0						5	1.000		
†	I.D.# 9100	3	9	8.5	5,3	530	530	Do	rot	- فحرا	Sample Date:
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7	BLANK (Seeded)	0					,	5	1.000		
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7	IO # 3 ==	3	UQ	8.6	4.9	490	433				Due Date: Analyst:  * distill ed Har viet As dien Has
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### KALAMAZOO WASTEWATER TREATMENT PLANT , D.O. & B.O.D.

	TEST DUE 4-23-65			RCI	!		1			]	
ATE	SAMPLE	1	BOTT. NO.	D.O.	DEPLE-	TEST	AVE. MG./L.	DAYS	FAC- TOR	MG./L.	REMARKS
, /	SOURCE	ML.		ł	<u> </u>			5			
18	Blank (SEEDED)	0	44	8.64	0,2		,	5	1.000		c 10- "
	I.D.# .900	3	9/	8.6	6,0	600	600				Sample Date: 4-16-8
	rodicu	6	132	8,62	8.4						Sample Ran: 4-18-8
				/			ļ				Due Date: 4-23-
		$\mathbb{L}_{-}$									Analyst: OSH/Box
	BLANK (Seeded)	0	44	8.6,4	0,2	_	-	5	1.000		
	T.D.# 1/5	3	84	8.3.6	5.9	590	590				Sample Date: 4-16-5
	No dien			8.53	8,2		<b>-</b>				Sample Ran: 4-18-8
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### KALAMAZOO WASTEWATER TREATMENT PLANT

SUSPENDED SOLIDS ANALYSIS - PRIMARY SAMPLE SOURCE NEW EFF. IND. INF. IND. EFF. 9:00 am NEW INF. 9,000 DISH NO./D.F. WT. DISH & SOLIDS WT. DISH MG./L. SOLIDS % REDUCTION WT. DISH & SOLIDS 22.4183 20.0956 WT. DISH & ASH 86 MG./L. VOL. SOLIDS 80 % VOL. SOLIDS рΗ **SECONDARY** 1:15pm 1:15pm SAMPLE SOURCE SEC. EFF. SEC, EFF. RETURN MIXED LIQ. RIV. MOSEL DISH NO. WT. DISH & SOLIDS WT. DISH 6621 21.4615 MG./L. SOLIDS % REDUCTION WT. DISH & SOLIDS WT. DISH & ASH 22,6644 21.4633 MG./L. VOL SOLIDS 116 100 % VOL. SOLIDS рΗ PAPER MILLS 3:00pm 3:00 pm GEO. PAC. UPJ. - BISH. SAMPLE SOURCE JAMES RIV. ALLIED DISH NO. WT. DISH & SOLIDS WT. DISH 21.8277 MG./L. SOLIDS WT. DISH & SOLIDS 21.6795 21.8301 WT. DISH & ASH 152

MG./L. VOL. SOLIDS

ANAL BY: AM W

% VOL. SOLIDS

рΗ

208

4-16-83



DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 385-8157

Mr. William Thacker James River Paper Company 243 East Paterson Street Kalamazoo, Michigan 49007

Dear Mr. Thacker:

Please find enclosed a table of the data you requested. As can be seen, not all the parameters were run on all the samples. Some of the analyses i.e., ammonia-nitrogen, total and ortho phosphorus and chlorides, were conducted in response to specific requests from Kalamazoo Water Reclamation Plant (KWRP) operations personnel in order for them to obtain the necessary information for process control adjustments. The PCB analyses are being conducted this year as a result of specific NPDES permit and IPP requirements placed on the City of Kalamazoo by the Michigan Department of Natural Resources.

Please feel free to contact me if you have any questions or need additional information.

Sincerely,

Bruce E. Merchant

Pance F. Wenten

Acting Industrial Services Supervisor

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c D. Starkey R. Amundson File

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YOT ANARYZED FOR

### CITY OF KALAMAZOO WASTEWATER SERVICE

### Individual Control Document Part III: Discharge Limitations, Monitoring Locations And Reporting

User Name:

James River Paper

Address:

100 Island Avenue

Parchment, MI 49004

Phone: Contact:

616-384-6514

: Ms. Liz Howard

#### A. Local Discharge "End-Of-Pipe" Limitations

1. These limitations and sampling requirements apply to the discharge from your facility to the wastewater system at the designated monitoring location described in (2) below. Please refer to the City of Kalamazoo Code, Chapter 28, (or the applicable ordinance of the municipality where the facility is located) and Part III (C) below for prohibited discharge limitations. Your facility is also subject to the Categorical Pulp, Paper or Paperboard Standards: 40 CFR § 430.186.

<u>Pollutants</u>	Daily Max.	Minimum Sampling	<u>Sample</u>	
	<u>mg/L</u>	<u>Frequency</u>	<u>Type</u>	
Cadmium, T	0.040	Semi-annual	Composite	
Chromium, T	4.67	Semi-annual	Composite	
Copper, T	2.23	Semi-annual	Composite	
Lead, T	0.110	Semi-annual	Composite	
Nickel, T	1.59	Semi-annual	Composite	
Zinc, T	5.30	Semi-annual	Composite	
Cyanide, T	0.250	Semi-annual	Grab	
Petroleum Hydrocarbon	100	Semi-annual	Grab	
рН	6.2-9.8 S.U.	Semi-annual	Grab	
Mercury, T	prohibited	Semi-annual	Composite	
PCBs, T	prohibited	First time only	Composite	
Pentachlorophenol	prohibited	Semi-annual or Certification	Composite	

The detection limit shall not exceed 0.2 ug/L for PCB and 0.5 ug/L for mercury, unless higher levels are appropriate because of sample matrix interference.

## KALAF 1200 WATER RECLAMAT' N PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility:	y: James River Corporation 243 East Patterson Kalamazoo, MI 49007			(2) Due Date: January 10, 1992			
				(3) Sample Point Code: JRC			
(4) Location:	Metering stati	on; west side	of the clarifier.				
(5) Purpose f	for Sampling:	Routine p  Violation  Other:		Period: <u>July 1,</u>	1991 - Decemb	er 31, 1991	
(6) Sampling	Method: Compo	site sample	es collected	with automat	ic sampler.		<del></del>
•	Grab	samples col	lected with	bottle on po	le.		
(7) Date and	Time of Compos	site Samples:	Start: 11/25	/91, 11:45 a	m End: 11	/26/91, 11:	20 am
(8) Date and	Time of Grab Sa	amples: 11/2	6/91, 11:20	am			
(9)			RE	SULTS			
Parameter	Value	Units	Sample Type*	<u>Parameter</u>	<u>Value</u>	Units	Sample Type*
Cadmium, T	<u>&lt; 0.005</u>	MG/L	C	Mercury, T	<u>&lt; 0.0005</u>	MG/L	<u>C</u>
Chromium, T	<u>&lt; 0.01</u>	MG/L	C	Cyanide, T	< 0.02	MG/L_	G
Copper, T	0.17	MG/L	C	Нq	7.5	<u>s.u.</u>	G
Lead, T	< 0.002	MG/L	<u>C</u>	РСВ, Т	< 0.1	UG/L_	G
Nickel, T	< 0.02	MG/L	C				· ,
Zinc, T	0.04	MG/L	<u>C</u>				
* Sample Type:	G = Grab sample	C = Composite	Sample				
(10) Name of	Laboratory	KAR LABOR	ATORIES, INC	•	(Attac	h copies of Lal	poratory Results
(11) Flow: Av	verage Daily	832 M GAL	S	Ма	aximum Daily	1.32 MM	GALS
designed to who manag and belief, t	der penalty of law the assure that qualified e the system, or those rue, accurate, and corisonment for know	d personnel prope se persons directly omplete. I am ew	orly gather and evaluates for gather are that there are s	uate the information pering the information ignificant penalties	n submitted. Based on, the information si for submitting false	on my inquiry of ubmitted is, to the information, inclu	the person or persor best of my knowledg ding the possibility o
Signature:	1/ehard /	Slaval V	Title:MIL	L MANAGER		Date: 1/8/92	_

Mail to:

### KALAM 'OO WATER RECLAMATIC PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility: James River Corporation 243 East Patterson			(2) Due Date: January 10, 1992				
	Kalamazoo, M				(3) Sample P	oint Code: JR	1
(4) Location:	Manhole alon	g east side of l	Pitcher, northwe	est of Plant 7, s	ample exit lead	(in sidewalk).	
(5) Purpose f	or Sampling:	☐ Violation	Resampling	Period: <u>July 1,</u>		er 31, 1991	
(6) Sampling	Method: Co	mposite samp	oles collecte	ed with autom	natic sampler	•	
	Gr	ab samples o	collected wit	ch bottle on	pole.		
(7) Date and	Time of Compo	site Samples:	Start: 11/	/25/91, 10:C	00 am End:	11/26/91,	9:45 am
(8) Date and	Time of Grab S	amples: 1	1/26/91, 9:45	am	<del></del>		
(9)			RES	SULTS			
Parameter	<u>Value</u>	<u>Units</u>	Sample Type*	<u>Parameter</u>	Value	<u>Units</u>	Sample Type*
Cadmium, T	∠0.005	MG/L	C	Mercury, T	<u>&lt; 0.0005</u>	MG/L	<u>C</u>
Chromium, T	<u>&lt; 0.01</u>	MG/L	C	Cyanide, T	<u>&lt; 0.02</u>	MG/L	G
Copper, T	0.20	MG/L	C	рH	8.4	S.U.	G
Lead, T	_0.014	MG/L	C	РСВ, Т	۷ 10	UG/L	G
Nickel, T	< 0.02	MG/L	c	=			
Zinc, T	_0.47	MG/L					<del></del>
* Sample Type:	G = Grab sample	C = Composite	Sample				
10) Name of	Laboratory <u>K</u>	AR LABORATO	RIES, INC.		(Attac	h copies of Lal	poratory Results)
11) Flow: A	verage Daily	52 M GAL	<u>S</u>	Ma	ximum Daily	80 M GALS	S
designed to who manag and belief, t	assure that qualifice the system, or tho rue, accurate, and corrisonment for know	ed personnel prope se persons directly complete. I am aw ving wolations.	erly gather and evaluer responsible for gath	uate the information nering the information	n submitted. Based on, the information s	on my inquiry of ubmitted is, to the	ordance with a system the person or persons best of my knowledge Iding the possibility of
Signature:	Vekard	Sennett	Title:_MILI	MANAGER	[	Date: 1/8/ 약곡	)
							<del></del>

Mail to:

### KALAM 'OO WATER RECLAMATIC PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility:	James River				(2) Due Date	: January 10,	1992
	243 East Pat Kalamazoo, I				(3) Sample P	oint Code: JR	2
(4) Location:	Manhole in P	itcher, Southw	est of Plant 8 pa	arking entrance	- sample northe	ast lead.	
(5) Purpose fo	or Sampling:	☑ Routine p ☐ Violation ☐ Other:	Resampling	Period: <u>July 1,</u>	1991 - Decemb	er 31, 1991	
(6) Sampling	Method: <u>Comp</u>	osite sample	es collected	with automat	ic sampler.		
	_Grab	samples col	lected with	bottle on po	ole.		
(7) Date and	Time of Compo	osite Samples:	Start: 11/25	/91, 10:40 A	M End: 1	1/26/91, 10	:30 AM
(8) Date and	Time of Grab S	Samples: 11/2	26/91, 10:30	AM			
(9)			RE	SULTS			
Parameter	<u>Value</u>	<u>Units</u>	Sample Type*	Parameter	<u>Value</u>	<u>Units</u>	Sample Type*
Cadmium, T	< 0.005	MG/L	C	Mercury, T	< 0.0005	MG/L	C
Chromium, T	< 0.01	MG/L	C	Cyanide, T	₹ 0.02	MG/L	<u> </u>
Copper, T	0.20	MG/L	C	pН		<u>s.U.</u>	G
Lead, T	0.003	MG/L	<u>C</u>	РСВ, Т	<u> </u>	_UG/L	G
Nickel, T	<u>&lt; 0.02</u>	MG/L	C				
Zinc, T	0.03	MG/L	C				
* Sample Type:	G = Grab sample	e C = Composite	: Sample				
(10) Name of	Laboratory	KAR_LABORATO	I RIES, INC.		(Attac	h copies of La	boratory Results)
11) Flow: Av	rerage Daily	S8. M GALS		Ma	aximum Daily	75 M GAL	<u>S</u>
designed to who manage and belief, to	assure that qualif the system, or th	ied personnel prope ose persons directly complete. I am av	erly gather and eval responsible for gatl	uate the information nering the information	n submitted. Based on, the information s	on my inquiry of ubmitted is, to the	ordance with a systen the person or person best of my knowledge uding the possibility o
Signature: 1	echard !	ennett	Title:_MILI	MANAGER		Date: 1/8/9	12

Mail to:

### KALAM 'OO WATER RECLAMATIC' PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility:	cility: James River Corporation 243 East Patterson Kalamazoo, MI 49007			(2) Due Date: January 10, 1992 (3) Sample Point Code: JR3					
(4) Location:	cation: Manhole in Pitcher - Southeast corner of Plant 9 - sample east lead.								
(5) Purpose fo	or Sampling:	☐ Violation I			1991 - Decemb	er 31, 1991			
(6) Sampling	Method:	Composite sa	mples collec	ted with aut	tomatic sampl	er.	-		
		Grab samples	collected w	rith bottle o	on pole.				
(7) Date and	Time of Comp	osite Samples:	Start: 11/26/9	1, 10:25 AM	End: <u>11</u>	/26/91, 10:	05 AM		
(8) Date and	Time of Grab	Samples: 11/2	6/91, 10:05	AM					
(9)			RES	SULTS					
<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type*	Parameter	<u>Value</u>	<u>Units</u>	Sample Type*		
Cadmium, T	스 0.005	MG/L	C	Mercury, T	<0.0005	MG/L	C		
Chromium, T	<u>&lt; 0.01</u>	MG/L	C	Cyanide, T	0.04	MG/L	G		
Copper, T	0.12	MG/L	c_	pН	10.1	<u>s.u.</u>	G		
Lead, T	0.004	MG/L	c_	РСВ, Т	< 0.1	UG/L_	G		
Nickel, T	4 0.02	MG/L	<u>C</u>		<del></del>				
Zinc, T	0.24	MG/L	c_	***************************************					
* Sample Type:	G = Grab samp	le C = Composite	Sample						
(10) Name of I	Laboratory	KAR LABOR	ATORIES, INC	•	(Attac	h copies of La	boratory Results)		
(11) Flow: Av	erage Daily	6.7 M GA	_S	Ma	aximum Daily	8.4 M GA	LS		
designed to who manage and belief, to	assure that quali the system, or th	fied personnel prope lose persons directly I complete. I am aw	rly gather and evaluresponsible for gather that there are s	uate the informatio nering the informatio ignificant penalties	n submitted. Based on, the information s	on my inquiry of submitted is, to the information, incl	ordance with a system the person or person best of my knowledge uding the possibility o		
							<del></del>		

Mail to:

# KALAM '.OO WATER RECLAMATIC' PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility: James River Corporation			(2) Due Date: January 10, 1992					
	243 East Patt Kalamazoo, M				(3) Sample Po	oint Code: JR	5	
(4) Location: Manhole in Pitcher, east of Administration Building, northwest of Plant 5 - Sample northwest lead.								
(5) Purpose for Sampling: Routine periodic report. Period: July 1, 1991 - December 31, 1991  Uiolation Resampling Other:								
(6) Sampling	Method: Compo	site sample	s collected	with automat	ic sampler.			
	Grab_	samples col	lected with	bottle on po	le.			
(7) Date and	Time of Compos	site Samples:	Start: 11/25/9	1, 11:00 AM	End: <u>11/</u>	26/91, 10:	50 AM	
(8) Date and	Time of Grab Sa	mples: <u>11/2</u>	6/91, 10:50	AM			•	
(9)			RES	SULTS				
Parameter	Value	<u>Units</u>	Sample Type*	<u>Parameter</u>	Value	<u>Units</u>	Sample Type*	
Cadmium, T	< 0.005	MG/L	C	Mercury, T	< 0.0005	MG/L	C	
Chromium, T	< 0.01	MG/L	C	Cyanide, T	< 0.02	MG/L	G	
Copper, T	0.10	MG/L_	C	рН	8.1	_S.U	G	
Lead, T	< 0.002	MG/L	C	РСВ, Т	< 0.1	_UG/L	G	
Nickel, T	۷ 0.02	MG/L	c_					
Zinc, T	0.04	MG/L	c					
* Sample Type:	G = Grab sample	C = Composite	Sample					
10) Name of	Laboratory	KAR LABOI	ا RATORIES, IN	C	(Attacl	h copies of Lal	boratory Results)	
11) Flow: A	verage Daily	101 M GALS		Ma	ximum Daily	120 M GAL	<u>.</u> S	
designed to who manag and belief, 1	assure that qualifie e the system, or thos rue, accurate, and c prisonment for know	d personnel prope se persons directly complete. I am aw ring violations.	rly gather and eval responsible for gath rare that there are s	uate the information nering the information ignificant penalties	n submitted. Based on, the information so for submitting false	on my inquiry of ubmitted is, to the information, inclu	ordance with a system the person or persons best of my knowledge uding the possibility of	
Signature:	Kennet	<b>T</b>	Title:MIL	L MANAGER		Date: 1/8/9	12	
						` `		
						· · · · · · · · · · · · · · · · · · ·	<del></del>	

Mail to:

# MICHIGAN DEPARTMENT OF NATURAL RESOURCES

DO NOT WRITE IN THIS SPACE

DIS. REJ. PR. Prom A

Required under authority of Act 64, PA. 1979, as amended and Act 138, PA. 1969.

Failure to file its punishable under section 299.548 MCL or Section 10 of Act 136, PA. 1999.

Ī	UNIFORM HAZARDOUS 1. Generator's US EPA ID No Manifest	2 Page 1	Informationan	the shaded areas
T	WASTE MANIFEST		nifest Docum	
	JANES RIVER	S M	29583	
	213 E PATTERSON	BaState Ger		
i.	4 Agenerators home 49002 5 516-383-5119 5 Transporter of Company Name 6 US EPA ID Number		nsporter's ID	
				31758-0400
-	Iransporter 2 Company Name 8 US EPA ID Number	E State Tran	nsporter's ID	
.# <u>.</u>	9 Designated Facility Name, and Site Address 10 US EPA ID Number	Faransporte GaState Fac	er's Phone	
	-Great Lakes Environmental Services			
9 2	22077 Hound Rd.  Warrent M. L. D. O. B. 7 - 4 - 8 - 5 - 7 - 4	H.Facility's	Phone 3 7 7 5 8 10 40	
	11 US DOT Description (including Proper Shipping Name, Hazard Class, and	iners 1	3. 14.	Waster -
o ic.	THE REPORT OF THE PROPERTY OF	Service of the servic	otal Unit entity WXX	NH NH
E	I (BQ) HAZARDOUS SUBSTANCE SOLID N.O.S., ORN-B	e	t.	
E R	WA9188 (POLICHLORINATED BIPHENYLS)PCB	DINDIL	1713	OSCE X
Ä T.	b 2			
O R		\$		
	C.		***	
	C.			
- 7				
	J. Additional Descriptions for Materials Listed Above		Codes toc Wa	stes Fall SI
	A THE BALLACES	Listed Abo	ove .	b/e-//
	STORAGE FOR DESPOSAL DATE: 200-93			它信息
				d/- 1/35
	15. Special Handling Instructions and Additional Information			
	In case of BARRGERCY contact Rike Pluster (313)758-0400  16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately deproper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition.	escribed above I	by S	
	according to applicable international and national government regulations.			
	Iff am a large quantity generator, certify that I have a program in place to reduce the volume and toxicity of to be economically practicable and that I have selected the practicable method of treatment, storage, or dis	posal currently.	available to:me	which minimizes the
	present and future threat to human health and the environment; OR; if I am a small quantity generator, I had generation and select the best waste management method that is available to me and that I can affor	ave made a god ord	od faith emort id	
	Printed/Typed Name Trans			Month Day Year
Y	Annelle Grand			REGISTS
RA	LZ Transportent Acknowledgement of Receipt of Materials  Printed/Typed Name   Signature			Manth Day Year
N B P	Timmy S Simms Chimas	2		onbans.
O R T	18 Transporter 2 Acknowledgement or Receipt of Materials  Printed Typed Name  Signature			Month Day Year
E R			-	
	19. Discrepancy Indication Space	ACTUR!	10 (d=13	8 FICALUMS
F C				
; }	20 Facility Owner County			
Ť	20 Facility Owner or Operator: Certification of receipt of hazardous materials covered by this man	nitest except a	s noted in s	Date
	Printed/Typed Name Signature Signature			Month Day Year
4	MICHAEL MIKAWIKI Plan		# NEWS	10319346

industrial User In Lation Form of 8.

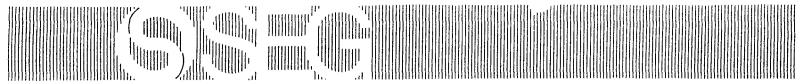
sign flow for Treatment system:	750,000	ے جھر دن	oriei er		
Is there a full-time operator?		Yes	No		
Are all units of system in service?		Yes, _	No		
Are off-the-shelf stock replacement parts available for critical components: e.g. pumps, probes,					
meters, etc.?		Yes _	No		
Is there an O & M Manual?		Yes _	No		
Is there a potential for bypasses?		Yes _	No		
On an attached sheet, provide a bried diagram of wastewater treatment facion of flow, sampling points (if any), pote	lity (Diagra	m should i	nclude: Trea	itment process	-
Is there sludge generated due to treat					No
Description of Sludge:	I CAN PUR	. 1'(- (	KUJT NE T	, IUPFEIZ	
1 PAP	'CR MILL :	SLUDGE (CL	RY. FIBERS T	TO2) TO FILT	 ER
PLANT	. SLUDGE	IS THEN D	DEWATERCO +	CONDFILLED WI'S PARCHMENT	TN SCUDE
Are there any RCRA hazardous waste	es generated	d? <u>√</u>	Yes	No	
Is a Waste Hauler used?	Yes		No		
Name of Hauler: (¿EN M.	LAKES ENVI AN CO, INC 087478574	3 SOLV	ENT DISTILLERS,	INC	
Identification Number: ② MID 9		(3) MIDS	780684088		
Generator Number: Mi	D 003938	8156583	310	(	1993 gw
Attach copies of any waste ma	FLAMMABLE L	190105	ity for the las		SEE ATTACHMEN
Waste types: waste co	TIXED OILS (NO CORROSINE SOL TECH MANAGEN	IDS IENT SERVICES		LDOUE SOLIDS INVIRONMENTAL SERI	NOES
Disposal facility used: (2) PETRO	CHEM PROCESS	(MG	(4) CHEM NET S 087418574		
Identification Number: 🛈 MIDO	0980615298		096963194 096963194		

ficant Industrial User Inspection Form de 6 of 9.

Do the Emerger	cy spil	I or discharge	e procedu	res include	notificatio	n policies?	
	$\sqrt{}$	_Yes	N	o ·			
To the Co	ontrol A	Authority:		Yes		No	
To the Ap	proval	Authority:	_/	Yes	•	No	
Is there seconda	ary con	tainment for Yes		* PCB TR	ANS FORMER!	S ARE CONTA	INED ON CONTAINMENT PALLETY
Has this facility	heen r			* CHEMICAL	MAY CONT	TAIN DILUTE	CRITICAL MATERIALS UVED  ast inspection date?
	_Yes		_No	When:			
Industrial Use	er Sam	npling Proc	edures:				
Does Industrial	User S	elf-Monitor?	/_	Yes	•	- No	
Are all analytica	l result	s copied to F	OTW for	IU file?		Yes	No
Is the frequency	the sa	ame as specif	fied in Ind	lividual Cor	itrol Docun	nent?	•
	_Yes		_No	•			
How diffe	erent:_						
Do Self-monitor	ing res	ults consider	ably diffe	r from IPP	monitoring	results?	-
	_Yes		_No		J		-
Do Self-monitor	ing req	uirements co	ver all loc	cal limits ar	nd, if applic	able, cateç	gorical parameters?
***************************************	_Yes		_No	٠.			•
not be covered	by cata	agorical or lo	cal limits?	HIST UNDERGO	GH SOLIDS PRIMARY	DISCHARGE SOLIDS REM	loadings that would  FROM PAPER PROCESS  ONL PRIOR TO DISCHARGE
				IS THE	CREAT	ET VALUM	FROM PRIMARY E OF DISCNATIGE FROM
,				R Part 136	or some c	ther appro	ved methods? FACILITY,
	_Yes		_No				
Are all sample limitations?	points	and/calculat	ions appl		enforcing e	end of pro	cess or end of pipe

Significant Industrial User Inspection Form Page 5 of 9.

Chemical/Waste Storage Areas:
s there Chemical/Waste storage on site?YesNo
Type of storage: TANKS, DRUMS, TOTES, PAILS.
Are storage containers clearly labeled?YesNo
Provide a list of Bulk Chemicals/Wastes on site:
PLEASE SEE ATTACHMENT
<u></u>
Poular Poular Com Poul
Are incompatibles stored separately?YesNo 3000000000000000000000000000000000000
Are these Chemicals/Wastes stored within a spill contained area of the plant?
YesNOT ALL ARE PLACED IN CONTAINMENT,
PALLES WHEN USED ON MACHINES.  Are any of these Chemicals/Wastes on the Critical Materials List?
Yes NOTE THAT BRUMS OF SODIUM HYPOCHURITE ARE PROSENT AS
On an attached sheet, provide a sketch of storage areas. (Sketch should include: locations of
of Chamicals Master within storagh area floor design or other putfolle to annitory approximately
Spill Prevention and Containment:  Or Chemicals, vastes within storage area, noor drains or other outlans to samilarly sewers in system.)  NOTE THAT METALS, CN-, WHICH ARE ON CRITICAL MATERIALS  LIST, ARE FOUND AT COMPLIANT LEVELS AT SANITARY SEWER  OUTFALLS FROM THIS FACILITY AND THAT ASPESSOS CONTAINING  MATERIALS MAY BE PRESENT IN SAME BUILDINGS  REMOVED NON 195
OUTFALLS FROM THIS FACILITY AND THAT ASPESTOS CONTAINING  MATERIALS MAY BE PRESENT IN SOME BUILDINGS
Spill Prevention and Containment:
Do conditions at this facility require a Spill Prevention Control and Counter Measures Program (SPCC) per 40 CFR 112, a Pollution Incident Prevention Plan (PIPP) per MDNR Rule 5, or a Slug Discharge Prevention Plan concerned with requirements addressing sludge discharges in 40 CFR 403.12 (f) and specific prohibitions in 40 CFR 403.5 (b)?
YesNo
Are Emergency spill or discharge procedures posted for immediate employee reference?
V-2



## SEG LABORATORIES, INC.

May 3, 1988

Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, Michigan 49007

Attn: Mr. Nasim Ansari

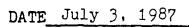
Analytical results for samples submitted by City of Kalamazoo, Michigan, received by SEG Laboratories, Inc. on April 28, 1988.

PO#: 43111

SEG Number:	75237	75238	75239
Tag:	James River Clarifier 7:50 A.M.	Georgia Pacific Clarifier GEO 11688 10:30 A.M. 04/25/88	Inmont INM11788 04/26/88
PCB-1016, ug/L	<0.1	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1	<0.1
SEG Number:	75240	75241	
Т	411:-3	11-2-2-	

SEG Number:	75240	75241
Tag:	Allied Paper Clarifier APC 11788 04/26/88	Upjohn Bishop Rd. UJB11788 04/26/88
PCB-1016, ug/L	<0.1	<0.1
PCB-1221, ug/L	<0.1	<0.1
PCB-1232, ug/L	<0.1	<0.1
PCB-1242, ug/L	<0.1	<0.1
PCB-1248, ug/L	<0.1	<0.1
PCB-1254, ug/L	<0.1	<0.1
PCB-1260, ug/L	<0.1	<0.1

Approved by Lori A. Vachon





# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

DATA SUMMARY SHEET

Highland, Michigan 48031

Sample Name/Date

	<del>                                     </del>		Inicha	KWRP	1 1 7 3 - 3	Coomein	Tomas	D: -1-2
			Upjohn- Bishop		f.Paper	Georgia Pacific	James River	Field Blank
Parameter	Units		6/24	6/24	6/24	6/24	6/24	6/24
			-/	-/~.	-/			1 0/21
Aroclor 1221	ug/l		<0.08	₹0.01	< 0.09	<0.05	<i>2</i> 0.06	< 0.01
Aroclor 1242	ug/l		₹0.05	< 0.01	< 0.05	< 0.03	< 0.03	<0.01
Aroclor 1254	ug/l		0.05	< 0.01	<0.03	0.03	< 0.03	<0.01
	~6/ ±	!		40,01	(0.0)	0.0)	(0.0)	0.01
Aroclor 1260	ug/l		< 0.03	< 0.01	<0.03	< 0.03	< 0.04	< 0.01
AIUCIUI 1200	ug/ I		20.03	<b>₹</b> 0.01	(0.05	£ 0.05	0.04	< 0.01
				,				
Total PCB's	ug/l		0.05	< 0.04	< 0.20	0.03	< 0.16	< 0.04
							<u> </u>	
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					}	}		
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		-						



DATE January 8, 1988

# Brighton Analytical Inc.

1576 Alloy Parkway

Phone (313) 887-6364

Highland, Michigan 48031

DATA SUMMARY SHEET

page 1 of 2

<del>]</del>								
PARAMETER	UNITS	Blank 33687	Allied Paper	River	Georgia Pacific	34387	Inmont	Upjohn
111111111111	ONLIB	12/2/0	12/2/87	12/2/01	12/2/87	12/ 3/ 0/	12/9/87	12/9/07
Aroclor 1221	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	۷۰.01
Aroclor 1242	ug/l	<0.01	<0.01	<0.01	<0.01	< 0.01	< 0.01	<0.01
Aroclor 1254	ug/l	<0.01	<0.01	<0.01	<0.01	<0.01	< 0.01	<0.01
Aroclor 1260	ug/l	<0.02	<0.02	<0.01	<0.02	<0.02	<0.02	<0.02
Total PCB's	ug/l	< 0.05	< 0.05	< 0.04	<0.05	< 0.05	<0.05	< 0.05
			1_					

TO

KAR Project No.: 981882

Date Reported: 07/23/96

Project Description : Analysis of one aqueous sample.

Sample ID: "River in-Take" Sampled By : AW of James River

Client: James River Corporation

Sample Date : 7/19/96 Sample Time: 3:15pm

Date Received: 7/19/96 Sample Type : agueous KAR Sample No.: 961882-01

Test Recision Units of Measure Method Analyzed Arelyst Сопиненте Prep, ECD PCB Arcslor (U16 PCB Arcslor (22) PCB Arcslor (232 PCB Arcslor (24) 7/22/90 SAS 7/22/96 MSZ 7/22/98 MSZ Complities EPA 3510 EPA 8081 द्धाः स्त्रा USA. EPA BORT 1722/96 MSZ 1722/96 MSZ 1722/96 MSZ 1722/96 MSZ 1722/96 MSZ 1722/96 MSZ 40.7 EPA 8081 EPA BOST EPA BOST EPA BOST 57 PCB Articler 1248 PCB Articler 1254 177 EPA BOST PCB Aroclars, total LOT

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KARLaboratories, Inc (618) 381-9666

#### ANALYTICAL RESULTS

To: James River Corporation Project No: 921298

Report Date: 6/24/92

Project Desc.: Sampling and analysis of one wastewater discharge at Epic Building.

Sample No.:921298-01 Type:aqueous Rec'd: 6/04/92 Sampled:

ID: "24 Hour Composite, 6/3-4/92, 1345-1345"

 Cadmium, total
 <0.005 mg/L</td>

 Chromium, total
 <0.01 mg/L</td>

 Copper, total
 0.15 mg/L

 Lead, total
 0.003 mg/L

 Mercury, total
 <0.0005 mg/L</td>

 Nickel, total
 <0.02 mg/L</td>

 Zinc, total
 0.22 mg/L

Sample No.:921298-02 Type:aqueous Rec'd: 6/04/92 Sampled: 6/04/92

ID: "Grab, 1410"

Cyanide, total <0.02 mg/L PH 7.9 S.U. PCB, total <0.1 ug/L

Unless otherwise noted, test results represent the sample(s) as they were received.

# KALAM 700 WATER RECLAMATION PLANT INDUCTRIAL USER SELF-MONITORING ... PORT

(1) Facility:		r Corporatio	n		(2) Due Date:	June 30, 1	992
	EPIC Plant				(3) Sample Po	oint Code: #	1 JRP
(4) Location:	400 Island Parchment,		•		Man Hole	cary Sewer	,
(5) Purpose f	for Sampling:	✓ Routine peri ☐ Violation Ro XX Other:	esampling			e Plan Drawi	
(6) Sampling	Method: 24 F	Hour Composi	te Type: A	Aqueous			
	Grat	1410	Type: A	Aqueous			
(7) Date and	Time of Compos	site Samples: S	Start: June 3	3, 1992 1:45p	m End: Ju	ne 4, 1992	2:15pm
(8) Date and	Time of Grab Sa	mples: June	e 4 <b>,</b> 1992 2	2:10pm			
(9)			RES	SULTS			
Parameter	<u>Value</u>	<u>Units</u>	Sample Type *	<u>Parameter</u>	Value	<u>Units</u>	Sample Type*
Cadmium, T	< 0.005	mg/L	C	Mercury, T	<0.0005	mg/L	C
Chromium, T	< 0.01	mg/L	C	Cyanide, T	< 0.02	mg/L	G
Copper, T	0.15	mg/L	C	рН	7.9	<u>S.U.</u>	G
_ead, T	0.003	mg/L	C	PCB, Total	<0.1	UG/L_	G
Nickel, T	< 0.02	mg/L	C				
Zinc, T	0.22	mg/L	C				
* Sample Type	e: G = Grab sample	C = Composite	Sample				
(10) Name of	Laboratory	KAR Laborato	ries '	•	_ (Attacl	n copies of Lab	oratory Results)
(11) Flow: A	verage Daily	5,833 Cu. F	t.*	Max	kimum Daily	8,100 Cu.Ft.	(6/3 <b>-</b> 6/4/92
designed to who mana- and belief,	o assure that qualifie ge the system, or thou true, accorate, and o aprisonment for know	ed personnel proper se persons directly i complete. I am awa	ly gather and eval responsible for gat are that there are s	ts were prepared under luate the information hering the information significant penalties for	submitted. Based , the information so or submitting false	on my inquiry of tubmitted is, to the linformation, inclu	the person or person pest of my knowledg ding the possibility o
	Mail to:	INDUST	RIAL PRETRE	ATMENT COORD	INATOR		<del></del>

Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

Name of Facility JAMES RIVER PARCHMENT GROUNDINGTER Date 9/30
Address : Time 9100 AM . Contact L/2 Howker
concact
Purpose: MET W/ LIZ HOWARD TO DISCUSS GROUNDWATER REMEDIATION
PROJECT AND TO INSPECT IT.
Items Discussed: 1. 6 WEEK MONITORING SCHEDUCE: INFORMED
LIZ HOWARD OF OUR REQUIREMENTS; a. WEEKLY SAMPLING FOR 6 WEEKS FOR BTE
b. REQUIRED IX PCB SAMPLE (DURING THE ABOVE)
C. REQUIRED/X METALS SAMPLING QUEING SAME GUK
d. " /X DNR. 5(AN [+Z(")
2, AFTER INITIAL SIX WEEK MONITORING, SAMPLING (SCANZ)
AND FLOW REPORT REQUIRED MONTHLY.
AND THE PETEL REQUIRED MONTHLY.
Observations: 1. FREE PRODUCT RECEVERY SYSTEM IS ON LINE
2. SAMPLE POINT IS APPULABLE AND APEQUATE
3. FLOW METER IS OFFRATIONAL
4. CONTACT FOR SHUT OFF IS CITY of PARCHMENT
WHICH HAS KEY, OR: 1. LIZ HOWARD OFFICE 384-65
HOME 629 55
2017/150
Further Action Required:  2. DON DAVOUST OFC 384 6450  NEED TO KNOW DESTINATION AND AMOUNTS 3 RANDY RIGGS OFC 384 6569
OF RECOVERED FREE PRODUCT - TOLD LIZ HOWARD THIS SE
File: General Correspondence
File:   General Correspondence   Inspection
Lab Data
Self-Monitoring/Compliance OtherSignature
New Industrial User Needs Attention

submitted by\_

# NALAW AZUU WATER RECLAMATION PLANT INC STRIAL USER SELF-MONITORING SEPORT

(1) Facility:	(1) Facility: James River Corporation - Parchment 100 Island Avenue				(2) Due Date: July 10, 1992				
					(3) Sample Po	(3) Sample Point Code: JRG			
(4) Location:	Manhole sout	th of the contro	l box at ground	water remediatio	on site on Jame	s River's privat	e road.		
(5) Purpose fo	or Sampling:	☐ Violation F	Resampling	eriod: <u>January</u>	1, 1992 - June	<u>30. 1992</u>			
(6) Sampling	Method:(	Grab							
(7) Date and	Time of Compo	osite Samples:	Start: N	P	End:	NA			
(8) Date and	Time of Grab S	Samples: 11-	6-1991	······································					
(9)			RE	SULTS					
<u>Parameter</u>	Value	<u>Units</u>	Sample Type*	<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type*		
Cadmium, T	2.005	mg/l	<u>_</u>	Mercury, T	<.0605	mg/l	<u>_</u>		
Chromium, T	4.01	mg/l	<u>_</u>	Cyanide, T	<.02	mg/l	<u>_</u> G_		
Copper, T	2001	mg/l	<u></u> G	рН	7.6	S.U.	G		
Lead, T	Z-002	mg/l	<u>_</u>	MDNR Scan 2	21.4	mg/l	<u>_</u> G		
Nickel, T	<.02	mg/l	<u> </u>	PCB	<u> </u>	jig/l	G		
Zinc, T	0.03	mg/l	<u>_</u> _G_	<u> </u>	<del></del>				
		e C = Composite		e~					
	, Laboratory				(Attac	n copies of Lab	oratory Results		
(11) Flow: Av	verage Daily	57,	600 ga	llono Ma	ximum Daily	57,60	00 Gallon		
designed to who manage and belief, t fine and imp	assure that qualife the system, or the system, or the crue, accurate, and prisonment for kno	ied personnel prope ose persons directly complete. I am aw wing violations.	orly gather and eval responsible for gat vare that there are s	s were prepared und uate the information hering the informatio significant penalties f	submitted. Based n, the information s for submitting false	on my inquiry of t ubmitted is, to the b information, includ	the person or person pest of my knowledg ding the possibility (		
Signature: &	lizabeth	a Howar	Ye/ Title: E	Wisonne Supervis	ntal 1	Date: <u>7-2</u>	<u>- 92</u>		

Mail to:

INDUSTRIAL PRETREATMENT COORDINATOR
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

To: James River Corporation

100 Island Ave.

Parchment, MI 49004

Attn: Elizabeth Howard

Project No.: 912533 Client No.: 1206

Project Date: 11/06/91
Date Promised: 11/27/91
Date Reported: 11/22/91

PO#: 83269-T

Project Desc.: Analysis of one aqueous sample.

Sample No.: 912533-01 Sample type: aqueous Rec'd on: 11/06/91

ID: "2015 Project, 11/6/91, 3:00pm"

PCB, total <1 ug/L High detection limit was due to sample matrix interference.

<0.02 mg/LCyanide, total Cadmium, total < 0.005 mg/LChromium, total < 0.01 mg/LCopper, total <0.01 mg/L Lead, total <0.002 mg/L <0.0005 mg/L Mercury, total Nickel, total < 0.02 mg/LZinc, total 0.03 mg/L

6.

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

#### ANALYTICAL REPORT

To: James River Corporation

10.10

100 Island Ave.

Parchment, MI 49004

Attn: Elizabeth Howard

Project No.: 912533

Client No.: 1206
Project Date: 11/06/91
Date Promised: 11/27/91 Date Reported: 11/22/91

PO#: 83269-T

Project Desc.: Analysis of one aqueous sample.

Sample No.: 912533-01 Sample type: aqueous Rec'd on: 11/06/91

ID: "2015 Project, 11/6/91, 3:00pm"

PCB, total <l ug/L High detection limit was due to sample matrix interference.

Cyanide, total <0.02 mg/LCadmium, total
Chromium, total
Copper, total <0.005 mg/L <0.01 mg/L <0.01 mg/L Lead, total <0.002 mg/L Mercury, total Nickel, total <0.0005 mg/L <0.02 mg/L Zinc, total 0.03 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Project No.: 962786

Date Reported : 10/29/96

Project Description: Sampling and analysis of two outfalls for IPP monitoring.

Sample ID: "CV1, 24 Hr. Composite, 10/14-15/96, 4:00-5:16pm"

Sampled By: SNH of KAR Laboratories

Client: Crown Vantage

Date Received:

10/15/96

Sample Date:

Sample Type:

aqueous

Sample Time:

KAR Sample No.: 962786-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep, Hg	Completed		EPA 245.2	10/21/96	MTM	
Prep, metals	Completed		EPA 30xx,200.x	10/16/96	DBL	
Cadmium, total	<5	ug/L	EPA 200.7	10/18/96	MTM	
Chromium, total	<10	ug/L	EPA 200.7	10/18/96	MTM	
Copper, total	130	ug/L	EPA 200.7	10/18/96	MTM	
Lead, total, by ICP	<50	ug/L	EPA 200.7	10/18/96	MTM	
Mercury, total	<0.5	ug/L	EPA 245.2	10/22/96	MTM	
Nickel, total	<20	ug/L	EPA 200.7	10/18/96	MTM	
Zinc, total	60	ug/L	EPA 200.7	10/18/96	MTM	
Prep, ECD	Completed		EPA 3510	10/16/96	SAS	
PCB Aroclor 1016	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Arocior 1242	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Aroclor 1260	<0.1	ug/L	EPA 8081	10/17/96	MSZ	
PCB Aroclors, total	NA	1	EPA 8081	10/17/96	MSZ	

"CV1, Grab #1" Sample ID:

Sampled By: SNH of KAR Laboratories

Sample Date: 10/14/96

Date Received : Sample Type:

10/14/96 aqueous

Sample Time: 4:00pm

KAR Sample No.: 962786-02

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cyanide, total	<5	ug/L	EPA 335.2	10/25/96	PML	
PH	7.8	S.U.	EPA 150.1	10/15/96	KAC	
TPH (Gravimetric Method)	13	mg/L	EPA 413.1 mod.	10/28/96	PML	

KAR Project No.: 960802

Date Reported: 04/16/96

Project Description: Sampling and analysis of two outfalls for IPP monitoring.

"CV1, 24 Hr. Composite, 4/1-2/96, 11:25am-10:38am" Sample ID:

Sampled By: SNH of KAR Laboratories

Date Received:

4/2/96

Sample Date:

Client: Crown Vantage

Sample Type:

aqueous

Sample Time:

KAR Sample No.: 960802-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, total	<5	ug/L	EPA 200.7A	4/4/96	MTM	· · · · · · · · · · · · · · · · · · ·
Chromium, total	<10	ug/L	EPA 200.7A	4/4/96	МТМ	
Copper, total	160	ug/L	EPA 200.7A	4/4/96	МТМ	· · · · · · · · · · · · · · · · · · ·
Lead, total, by ICP	<50	ug/L	EPA 200.7A	4/4/96	МТМ	
Mercury, total	<0.5	ug/L	EPA 245.2	4/5/96	МТИ	
Nickel, total	<20	ug/L	EPA 200.7A	4/4/96	МТМ	
Zinc, total	70	ug/L	EPA 200.7A	4/4/96	МТМ	
PCB Aroclor 1016	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8080	4/3/96	MSZ	<del></del>
PCB Aroclor 1254	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1260	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclors, total	NA NA	<u> </u>	EPA 8080	4/3/96	MSZ	

Sample ID: "CV1, Grab #1"

Sampled By: SNH of KAR Laboratories

Sample Date : 4/1/96 Sample Time: 11:25am Date Received :

4/1/96

Sample Type:

aqueous

KAR Sample No.: 960802-02

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cyanide, total	<20	ug/L	EPA 335.2	4/8/96	CAS	
PH	8.0	S.U.	EPA 150.1	4/1/96	CAS	
TPH (Gravimetric Method)	2	mg/L	EPA 413.1 mod.	4/5/96	PML	

KAR Project No.: 960802

Date Reported: 04/16/96

Project Description: Sampling and analysis of two outfalls for IPP monitoring.

Sample ID: "CV2, 24 Hr. Composite, 4/1-2/96, 11:10am-10:15am"

Sampled By: SNH of KAR Laboratories

Date Received: 4/2/96

Sample Date: Sample Type: aqueous

Sample Time : KAR Sample No. : 960802-06

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, totai	<5	ug/L	EPA 200.7A	4/4/96	MTM	<del></del>
Chromium, total	<10	ug/L	EPA 200.7A	4/4/96	МТМ	
Copper, total	30	ug/L	EPA 200.7A	4/9/96	МТМ	
Lead, total, by ICP	<50	ug/L	EPA 200.7A	4/4/96	МТМ	
Mercury, total	<0.5	ug/L	EPA 245.2	4/5/96	МТМ	
Nickel, total	<20	ug/L	EPA 200.7A	4/4/96	МТМ	
Zinc, total	60	ug/L	EPA 200.7A	4/4/96	МТМ	······································
PCB Aroclor 1016	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080	4/3/96	MSZ	<del></del>
PCB Aroclor 1232	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080	4/3/96	MSZ	<del></del>
PCB Aroclor 1248	<0.1	ug/L	EPA 8080	4/3/96	MSZ	··
PCB Aroclor 1254	<0.1	ug/L	EPA 8080	4/3/96	MSZ	
PCB Aroclor 1260	<0.1	ug/L	EPA 8080	4/3/96	MSZ	······································
PCB Aroclors, total	NA	<del></del>	EPA 8080	4/3/96	MSZ	<del></del>

Sample ID : "CV2, Grab #1"

Client: Crown Vantage

Sampled By: SNH of KAR Laboratories

Sample Date: 4/1/96

Sample Type: aqueous

Sample Time: 11:10am

Date Received: 4/1/96

Sample Type: aqueous

KAR Sample No.: 960802-07

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cyanide, total	<20	ug/L	EPA 335.2	4/9/96	CAS	
PH	8.2	S.U.	EPA 150.1	4/1/96	CAS	
TPH (Gravimetric Method)	3	mg/L	EPA 413.1 mod.	4/8/96	PML	

KAR Project No.: 953539

Date Reported: 12/15/95

11/27/95

Project Description: Sampling and analysis of one outfall for four consecutive days.

Sample ID: "CV1, 1st of 4 24 Hr. Composites, 11/27-28/95, 10:46-10:20am"

Sampled By: SNH of KAR Laboratories Date Received:

Sample Date: Sample Type: aqueous
Sample Time: KAR Sample No.: 953539-01

Result Units of Measure Method Analyzed Analyst Comments Test <5 EPA 200.7A 12/7/95 MTM Cadmium, total ug/L Chromium, total <10 ug/L EPA 200.7A 12/7/95 MTM 380 EPA 200.7A 12/7/95 Copper, total ug/L MTM Lead, total, by ICP <50 EPA 200.7A 12/7/95 MTM ug/L <0.0005 Mercury, total ug/L EPA 245.2 12/8/95 DBL EPA 200.7A 12/7/95 MTM Nickel, total <20 ug/L 98 EPA 200.7A 12/7/95 Zınc, total MTM ug/L PCB Aroclor 1016 <0.1 ug/L EPA 8080A 12/4/95 MSZ PCB Aroclor 1221 < 0.1 ug/L EPA 8080A 12/4/95 MSZ <0.1 PCB Aroclor 1232 12/4/95 ug/L EPA 8080A MSZ PCB Aroclor 1242 <0.1 EPA 8080A 12/4/95 MSZ ug/L EPA 8080A 12/4/95 MSZ PCB Aroclor 1248 < 0.1 ug/L PCB Aroclor 1254 <0.1 EPA 8080A 12/4/95 MSZ ug/L MSZ PCB Aroclor 1260 <0.1 ug/L EPA 8080A 12/4/95 PCB Aroclors, total NA EPA 8080A 12/4/95 MSZ

Sample ID: "CV1, Grab #1, Set #1"

Client: Crown Vantage

Sampled By: SNH of KAR Laboratories Date Received: 11/27/95

Sample Date: 11/27/95 Sample Type: aqueous
Sample Time: 10:46am KAR Sample No.: 953539-02

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cyanide, total	<20	ug/L	EPA 335.2	12/1/95	CAS	
PH	6.9	S.U	EPA 150.1	11/27/95	CAS	
TPH (Gravimetnc Method)	2	mg/L	EPA 413.1 mod.	12/7/95	CAS	

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KAR Laboratories, Inc.

(616) 381-9666

KAR Project No.: 952630

Date Reported: 09/13/95

Project Description: Sampling and analysis of two outfalls for IPP Monitoring.

Sample ID: "CV2, 24 Hr. Composite, 8/28-29/95, 11:50-1:50pm"

Client: Crown Vantage

Sampled By: SNH of KAR Laboratories Date Received :

8/29/95 Sample Type: aqueous Sample Date:

KAR Sample No.: 952630-06 Sample Time:

outiple Title.									
Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments			
Cadmium, total, low level	<0.002	mg/L	EPA 213.2	9/12/95	MTM	Elevated detection limit due to sample matrix interference			
Chromium, total	<0.1	mg/L	EPA 200.7A	9/8/95	MTM	Elevated detection limit due to sample matrix interference			
Copper, total	<02	mg/L	EPA 220.1	9/12/95	MTM	Elevated detection limit due to sample matrix interference.			
Lead, total	<0.05	mg/L	EPA 239.2	9/11/95	MTM	Elevated detection limit due to sample matrix interference			
Mercury, total	0 0007	mg/L	EPA 245.2	9/7/95	MTM				
Nickel, total	<0.2	mg/L	EPA 200.7A	9/8/95	MTM	Elevated detection limit due to sample matrix interference.			
Zınc, total	0.40	mg/L	EPA 200.7A	9/8/95	MTM				
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclor 1232	<0.1	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclor 1242	<01	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclor 1260	<0.1	ug/L	EPA 8080A	9/12/95	MSZ				
PCB Aroclors, total	NA		EPA 8080A	9/12/95	MSZ				

KAR Project No.: 952630

Client: Crown Vantage Date Reported: 09/13/95

Project Description: Sampling and analysis of two outfalls for IPP Monitoring.

Sample ID: "CVP, 24 Hr. Composite, 8/28-29/95, 11:30-1:30pm"

Sampled By: SNH of KAR Laboratories

Date Received: 8/29/95

Sample Date: Sample Type: aqueous

Sample Time: KAR Sample No.: 952630-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, total	<0.005	mg/L	EPA 200.7A	9/8/95	MTM	
Chromium, total	< 0.01	mg/L	EPA 200.7A	9/8/95	MTM	······································
Copper, total	<0.02	mg/L	EPA 220.1	9/12/95	MTM	
Lead, total, by ICP	<0.05	mg/L	EPA 200.7A	9/8/95	MTM	
Mercury, total	<0.0005	mg/L	EPA 245.2	9/7/95	MTM	
Nickel, total	<0.02	mg/L	EPA 200.7A	9/8/95	MTM	
Zinc, total	0.01	mg/L	EPA 200.7A	9/8/95	MTM	
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	*****
PCB Aroclor 1260	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	9/12/95	MSZ	

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KAR Laboratories, Inc.

KAR Project No.: 951890

Date Reported: 07/06/95

Project Description: Sampling and analysis of two outfalls for IPP Monitoring.

"CVP, 24 Hr. Composite, 6/26-27/95, 10:40-11:45am" Sample ID:

Sampled By: SNH of KAR Laboratories

Client: James River Corporation

Date Received :

6/27/95

6/26/95

aqueous

Sample Date:

Sample Type:

Date Received:

aqueous

KAR Sample No.: 951890-01 Sample Time:

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, total	<0.005	mg/L	EPA 6010A	6/30/95	DBL	
Chromium, total	<0.01	mg/L	EPA 6010A	6/30/95	DBL	
Copper, total	<0.05	mg/L	EPA 6010A	6/30/95	DBL	
Lead, total, by ICP	<0.05	mg/L	EPA 6010A	6/30/95	DBL	
Mercury, total	<0.0005	mg/L	EPA 7470A	7/6/95	MTM	
Nickel, total	<0.02	mg/L	EPA 6010A	6/30/95	DBL	
Zinc, total	0.03	mg/L	EPA 6010A	6/30/95	DBL	
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclor 1260	<0.1	ug/L	EPA 8080A	7/5/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	7/5/95	MSZ	

Sample ID: "CVP, Grab #1"

Sampled By: SNH of KAR Laboratories

Sample Date: 6/26/95

Sample Time: 12:10pm

Sample Type: KAR Sample No.: 951890-02

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cyanide, total	<0.02	mg/L	EPA 335.2	6/28/95	CAS	
PH	7.4	S.U.	EPA 150.1	6/26/95	CAS	
TPH (Gravimetric Method)	<1	mg/L	EPA 413.1 mod.	6/28/95	CCP	

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KAR Laboratories, Inc.

(616) 381-9666

KAR Project No.: 952630

Date Reported: 09/13/95

Project Description: Sampling and analysis of two outfalls for IPP Monitoring.

Sample ID: "CV2, 24 Hr. Composite, 8/28-29/95, 11:50-1:50pm"

Sampled By: SNH of KAR Laboratories Date Received: 8/29/95

Sample Date:

Client: Crown Vantage

Sample Type: aqueous
KAR Sample No.: 952630-06

Sample Time:

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, total, low level	<0.002	mg/L	EPA 213.2	9/12/95	MTM	Elevated detection limit due to sample matrix interference.
Chromium, total	<0.1	mg/L	EPA 200.7A	9/8/95	MTM	Elevated detection limit due to sample matrix interference.
Copper, total	<0.2	mg/L	EPA 220.1	9/12/95	MTM	Elevated detection limit due to sample matrix interference.
Lead, total	<0.05	mg/L	EPA 239.2	9/11/95	MTM	Elevated detection limit due to sample matrix interference.
Mercury, total	0.0007	mg/L	EPA 245.2	9/7/95	MTM	
Nickel, total	<0.2	mg/L	EPA 200.7A	9/8/95	МТМ	Elevated detection limit due to sample matrix interference.
Zinc, total	0.40	mg/L	EPA 200.7A	9/8/95	MTM	
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1260	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	9/12/95	MSZ	

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KAR Laboratories, Inc.

(616) 381-9666

# NON-DOMESTIC USER SURVEY FORM

5.0.

GENERAL INFORMAT	<u> </u>					
KALAMAZOO VALL	EY COMMUNITY	COLLEGE				
Corporate Name			Plant Name			
6767 West "O" .	Avenue					
Address - Stre	····	er	Address	- Street and Number		
Kalamazoo l	MI	49009-9606				
City		Zip Code	City	Zip Code		
			(6	516) 372-52000		
			Plant Pho			
Robert Lewis	s, Director	of Physical Plar	ıt	(616) 372-5298		
Name and Title				Phone Number		
	Print o	R. Hartman or Type Name of	Responsible	Official		
Nature of busine	ss: High	gher Education				
		Other (Ed	ucat(ional) I	<b>y</b> stitytion		
Write the approp	riate Standa	rd Industrial C	ode (SIC) in	n the box above.		
What types of wa	ste(s) do yo	u discharge to	the sanitary	y sewer?		
N. 🔀 Sanitary		B. () Wash	Water	C. Rinse Waters		
O. Cooling	Water	E. Proce	ss Waters	F. Scrubber Waters		
G. () Other						
o you use, stor	e or dischar	ge any acids, b	ases or mate	erials listed in Table I?		
A. ()Yes	B. ()	No				
in a residual re	sidue or slu	dge type waste?	tewater trea	atment facility result		
A. ( )Yes	B. $(X)$	NO				

6.	Sch	nedule of operations:
	Α	Number of employees.
	В	16 hrs/day 6 days/wk 2 shifts/day 12 mos/yr
7.	Α.	If you answered only A to question three(3), sign and return this portion of survey form.
	В.	If you answer to question three (3) is other than A, complete Section II through VIII of this form, sign it, and return to:
II.	<u>PRO</u>	Jean Eldred, Industrial Surveillance Technician Kalamazoo Wastewater Treatment Plant 1415 N. Harrison Kalamazoo, Michigan 49007
	1.	Provide a complete list of products used or stored on the site which appear on Table I (the consolidated Critical Materials List and Priority Pollutants List). If you use trade name or proprietory chemicals which do not list contents on the package, indicate the trade name(s) and manufacturer's name(s) at this time. You must also write the manufacturer to request an OSHA Form 20 for each such substance and provide POTW with the necessary information when available, i.e., use numbers NOT chemical name, Table I:
	2.	Describe each process (add sheets if needed):
	3.	Is any of the enclosed information considered to be confidential?  AYes BNo C. If yes, explain what and why (all requests for confidentiality will be processed according to 40 CFR Part 2):
	4.	Water Supply: AMunicipal BWell COther, explain
		D. Consumption Used: A(ft <sup>3</sup> , gals per time unit)  B(ft <sup>3</sup> , gals per time unit)  Consumption Total:
	5.	Does your facility have a Spill Prevention Control and Counter Measures Program (SPOC) CFR 112 or a Pollution Incident Prevention Plan (PIPP) MDNR Rule five (5).
		A. (Yes B. (No

# MANUFACTURING (Continued) 3790 Miscellaneous Transportation Equipment 3792 Travel trailers & campers 3795 Tanks and tank components

# 3800 INSTRUMENTS & RELATED PRODUCTS 3810 Engineering & Scientific Instruments

3820 Measuring & Controlling Devices 3830 Optical Instruments and Lenses

3840 Medical Instruments and Supplies 3860 Photographic Equipment & Supplies

# 3900 MISCELLANEOUS MANUFACTURING INDUSTRIES

3910 Jewelry, Silverware & Plated Ware

3930 Musical Instruments

3940 Toys & Sporting Goods

3950 Pens, Pencils, Office & Art Supplies

3990 Miscellaneous Manufactures

#### TRANSPORTATION

#### 4010 RAILROADS

4200 TRUCKING AND WAREHOUSING

4210 Trucking Local & Long Distance

4214 Hauling Liquid Wastes

4221 Farm Product Warehousing & Storage

4222 Refrigerated Warehousing

4230 Trucking Terminal Facilities

4400 WATER TRANSPORTATION

4430 Great Lakes Transportation

4440 Transportation on Rivers and Canals

4452 Ferries

4454 Towing and tugboat services

4460 Water Transportation Services

4463 Marine Cargo Handling

#### **SERVICES**

4900 ELECTRIC, GAS & SANITARY SERVICES

4911 Electric Services

4925 Gas production and/or distribution

4953 Refuse systems

5810 EATING & DRINKING PLACES

#### 6512 OFFICE BUILDINGS

7000 HOTELS & OTHER LODGING PLACES 7011 Hotels, motels, & tourist courts

#### SERVICES (Continued)

7030 Camps and Trailering Parks

7032 Sporting and recreational camps

7210 Laundry, Cleaning & Garment Services

7215 Coin-operated laundries

7391 Laboratories-testing and research

7399 Water softener service

7500 AUTO REPAIR SERVICES & GARAGES

7530 Automotive Repair Shops

7542 Car Washes

7900 AMUSEMENT & RECREATION SERVICES

7933 Bowling alleys 7940 Commercial sports

7941 Sports clubs and promoters

7948 Racing including track operation

7992 Public golf courses

7996 Amusement parks

7997 Membership sports & recreation clubs

8000 HEALTH SERVICES

8050 Nursing and personal care facilities

8060 Hospitals

8070 Medical and Dental Laboratories

8080 Outpatient Care Facilities

Code Title	Code Title
MANUFACTURING (Continued)	MANUFACTURING (Continued)
2892 Explosives 2893 Printing Inks	3398 Metal heat treating
2899 Salt (by evaporation) 2900 PETROLEUM AND COAL PRODUCTS	3400 FABRICATED METAL PRODUCTS 3410 Metal cans & shipping containers
2911 Petroleum refining 2950 Paving and roofing materials	3420 Cutlery, hand tools, & hardware 3430 Plumbing & heating, except electric 3440 Fabricated structural metal products
3000 RUBBER AND MISC. PLASTIC PRODUCTS 3011 Tires and inner tubes	3442 Metal doors, sash & trim 3443 Fabricated plate work (boiler shops) 3444 Sheet metal work
3069 Fabricated rubber products 3079 Miscellaneous plastic products	3450 Screw machine products, bolts, etc. 3460 Metal forgings and stampings
3100 LEATHER AND LEATHER PRODUCTS 3111 Leather tanning and finishing	3462 Iron and steel forgings 3463 Nonferrous forgings 3465 Automotive stampings 3470 Metal services
3200 STONE,CLAY,AND GLASS PRODUCTS 3220 Glass and Glassware,Pressed or Blown 3241 Cement 3250 Structural Clay Products	3471 Plating and polishing 3479 Metal coating and allied services 3480 Ordnance and Accessories 3490 Misc. Fabricated Metal Products
3260 Pottery and Related Products 3270 Concrete, Gypsum and Plaster Products 3271 Concrete block and brick 3273 Ready-mixed concrete	3500 MACHINERY, EXCEPT ELECTRICAL 3510 Engines and turbines 3520 Farm and Garden Machinery
3274 Lime 3275 Gypsum products 3290 Misc. Nonmetallic Mineral Products	3530 Construction & Related Machinery 3540 Meatworking machinery 3550 Special Industry Machinery
3291 Abrasive products 3292 Asbestos products 3295 Minerals,ground or treated	3560 General Industrial Machinery 3570 Office & Computing Machines 3580 Refrigeration & Service Machinery
3297 Nonclay refractories	3590 Misc. Machinery, except electrical
3300 PRIMARY METAL INDUSTRIES 3310 Blast Furnaces & Basic Steel Products 3312 Blast Furnaces & Steel Mills 3313 Electrometallurgical products	3600 ELECTRIC AND ELECTRONIC EQUIPMENT 3610 Electric Distributing Equipment 3620 Electrical Industrial Apparatus 3630 Household appliances
3315 Steel wire and related products 3316 Cold finishing of steel shapes	3640 Electric lighting and wiring equipment 3650 Radio & TV Receiving Equipment
3317 Steel pipe and tubes 3320 Iron and Steel Foundries 3321 Gray iron foundries	3660 Communication Equipment 3670 Electronic Components & Accessories 3690 Misc. Electrical Equipment & Supplies
3322 Malleable iron foundries 3330 Primary Nonferrous Metals 3331 Primary copper	3700 TRANSPORTATION EQUIPMENT 3710 Motor Vechicles & Equipment
3332 Primary lead 3333 Primary zinc 3334 Primary aluminum	3711 Motor Vechicles & Car Bodies 3714 Motor Vechicles & Accessories 3715 Truck trailers
3340 Secondary Nonferrous Metals 3360 Die Casting	3720 Aircraft and parts 3730 Ship & Board building and repairing
3361 Aluminum foundries 3362 Brass,bronze & copper foundries 3390 Misc. Primary Metal Products	3740 Railroad Equipment 3750 Motorcycles,Bicycles & Parts 3760 Guided Missles,Space Vechicles Parts

## PESTICIDES (Continued)

- 241. paraquat 242. parathion
- 243. phorate
- 244. phosazetim
- 245. phosmet
- 246. phosphamidon 247. rotenone
- 248. silvex, propylene glycolbutyl ether ester
- 249. sodium fluoroacetate
  - 250. strychnine
  - 251. sulfallate
  - 252. sulfotepp
  - 253. TDE
  - 254. TEPP
  - 255. terbufos
  - 256. tetrachlorvinphos
  - 257. thiram
  - 258. toxaphene
  - 259. trichlorfon
  - 260. trichlorophenoxyacetic acid (2,4,5-T)
  - 261. trifluralin
  - 262. ziram

## ATTACHMENT A

## STANDARD INDUSTRIAL CLASSIFICATION CODES

Note: This is an edited list.

Code Title	Code Title
AGRICULTURE	MANUFACTURING (Continued)
O100 AGRICULTURAL PRODUCTION-CROPS O200 AGRICULTURAL PRODUCTION- LIVESTOCK O211 Beef Cattle Feedlots O241 Dairy Farms O700 AGRICULTURAL SERVICES MINING	2080 Beverages 2082 Malt Beverages 2084 Wines, brandy, and brandy spirits 2085 Distilled liquor, except brandy 2086 Bottled and canned soft drinks 2087 Flavoring extracts and sirups, nec. 2090 Misc. Foods and Kindred Products 2091 Canned and cured seafoods 2092 Fresh or frozen packaged fish
1000 METAL MINING	2200 TEXTILE MILL PRODUCTS
1011 Iron Ores 1021 Copper Ores 1081 Metal Mining Services	2300 APPAREL AND OTHER TEXTILE PRODUCTS
1300 OIL AND GAS EXTRACTION 1380 Oil and Gas Field Services	2400 LUMBER & WOOD PRODUCTS 2420 Sawmills and Planing Mills 2430 Millwork, Plywood & Structure Member
1400 NONMETALIC MINERALS 1422 Crushed and Broken Limestone 1440 Sand and Gravel 1450 Clay and Related Minerals 1470 Chemical and Fertilizer Minerals 1492 Gypsum	2440 Wood Containers 2448 Wood pallets and skids 2450 Wood Buildings and Mobile Homes 2491 Wood preserving 2492 Particleboard 2500 FURNITURE AND FIXTURES
CONSTRUCTION	2500 FURNITURE AND FIXTURES
1500 GENERAL BUILDING CONTRACTORS	2600 PAPER AND ALLIED PRODUCTS 2611 Pulp mills
1600 HEAVY CONSTRUCTION CONTRACTORS	2621 Paper mills except building paper 2631 Paperboard mills
MANUFACTURING	2640 Misc. Converted Paper Products 2650 Paperboard Containers and Boxes 2661 Building paper and board mills
2000 FOOD AND KINDRED PRODUCTS 2010 Meat Products 2011 Meat Packing Plants & Slaughter Houses 2020 Dairy Products 2030 Preserved Fruits & Vegetables 2033 Canned Fruits & Vegetables 2035 Pickles, Sauces & Salad Dressings 2037 Frozen Fruits & Vegetables 2040 Grain Mill Products 2043 Cereal Breakfast Foods	2700 PRINTING AND PUBLISHING 2710 Newspapers 2750 Commercial Printing 2790 Printing Trade Services  2800 CHEMICALS AND ALLIED PRODUCTS 2810 Industrial Inorganic Chemicals 2820 Plastics Materials & Synthetics 2830 Drugs
2047 Dog, Cat & Other Pet Food 2050 Bakery Products 2060 Sugar and Confectionary Products 2063 Beet Sugar 2070 Fats & Oils 2076 Vegetable Oil Mills 2077 Animal & Marine Fats & Oils	2840 Soap, Cleaners, and Toilet Goods 2850 Paints and Allied Products 2860 Industrial Organic Chemicals 2870 Agricultural Chemicals 2890 Miscellaneous Chemical Products 2891 Adhesives and sealants

#### VII. MISCELLANEOUS

Describe any saf your site:	fety precautions to be observed by those visiting at None
Contact Person:	Name Robert Lewis
	Title Director of Physical Plant
	Phone Number (616) 372-5298

#### NON-DOMESTIC USER SURVEY FORM

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

## RED CHECKED ITEMS ARE MATERIALS THAT MAY BE PRESENT ON CAMPUS

#### TABLE I

The following is a list of the U.S. EPA Priority Pollutants consolidated with the current Critical Materials Register compiled by the Michigan Department of Natural Resources.

## ORGANICS

	•	01(0)	
1.	acids	√37.	bis(2-chloromethyl) ether
$\sqrt{2}$ .	acenaphthene		3-(chloromethyl) pyridine hydrochloride
√3.	acetone cyanohydrin		1-(4-chlorophenyl)-3, 3-dimethyl triazene
<b>4</b> .		<b>40</b> .	
√5.	acrolein	41.	
<i>√</i> 6.	acrylic acid	42.	chloroprene
<i>√</i> 7.	acrylonitrile	ν43.	
√8.	allyl chloride	<b>44</b> .	p-cresidine
<i>✓</i> 9.	2-aminoanthraquinone		2,4-diaminoanisole sulfate
<i>∠</i> 10.	aminoazobenzene	<b>46</b> .	
<i>→</i> 11.	o-aminoazotoluene	∠47.	2,4-diaminotoluene
<i>√</i> 12.	4-aminobiphenyl	<b>∠</b> 48.	
_13.	3-amino-9-ethylcarbazole	49.	tris(dibromopropyl)phosphate
<u>14.</u>	l-amino-2-methylanthraquin	$\nu$ 50.	
<u>15.</u>	aminotriazole (amitrole)		3,3-dichlorobenzidine
16.	aniline		3,3-dichlorobenzidine salts
<i>√</i> 17.	aniline hydrochloride		1,2-dichloroethane
√18.	o-anisidine	<b>√</b> 54.	dichloroethylenes
√19.	o-anisidine hydrochloride	√54.	a. l,l-dichloroethylene
20.	benz(a)anthracene	<i>i</i> √54.	b. 1,2-trans-dichloroethylene
√21.	benzene	$\sqrt{55}$ .	dichloropropane and dichloropropene
i/22.	benzidine	<b>√</b> 55.	a. 1,3-dichloropropylene;
√23 <b>.</b>	benzidine salts		(1,3-dichloropropene)
$\sqrt{24}$ .	benzo(a)pyrene	$\nu$ 55.	b. 1,2-dichloropropane
$\sqrt{25}$ .	brucine		1,2:3,4-diepoxybutane
	carbon tetrachloride	<i>√</i> 57.	•
$\nu^{27}$ .		$\nu^{58}$ .	
	a. chlorobenzene	$\nu^{59}$ .	
	b. 1,2,4-trichlorobenzene	<i>√</i> 60.	2,4-dimethylphenol
	<ul><li>c. 1,2-dichlorobenzene</li><li>d. 1,3-dichlorobenzene</li></ul>	√61.	4,6-dinitro-o-cresol
	e. 1,4-dichlorobenzene	√62.	2,4-dinitrophenol
	chlorinated dibenzofurans	63.	
	chlorinated dioxins	64.	dinitrotoluene
25.	chlorinated ethanes	√64. √65.	a. 2,6-dinitrotoluene
30.		∠66.	di-n-octyl phthalate 1,4-dioxane
/30.	b. 1,1-dichloroethane	67.	2,3-epoxy-1-propanal
30. 30.	c. chloroethane	√68.	ethylbenzene
30.	d. 1,1,2,2-tetrachloroethane	√69.	
31.	chlorinated naphthalene	√70.	•
<i>y</i> 31.	a. 2-chloronaphthalene	∠71.	ethylene oxide
√32.	chlorinated phenols	√72.	ethylene thiourea
32.	a. 2-chlorophenol	73.	bis(2-ethylhexyl)phthalate
√32.	b. parachlorometa-cresol	74.	ethylmethanesulfonate
32.	c. 2,4-dichlorophenol	75.	fluoranthene
33.	1-chloro-2,3-epoxypropane	1/16.	2-(2-formylhydrazino)-4-(5-nitro-2-fury)-
×34.	chloroalkyl ethers	V10.	thiazole
√35.	bis(2-chloroethyl ether		
₩36.	chloroform	ORGAI	NICS CONTINUED ON PAGE 2
-		0.13/11	

TABLE I

1				
	V77.	Haloethers	√116.	N-nitrosomethylvinylamine
	~77.	A shilawambamud mbamud sabbu		
		b. 4-bromophenyl phenyl ether	√117.	N-nitrosomorpholine
	~77.		<i>√</i> 118.	N-nitroso-N-phenylhydroxyl-amine,
				ammonium salt
	$\sqrt{77}$ .		119.	N-nitrososarcosine
	$\sqrt{78}$ .	Halomethanes	<i>√</i> 120.	pentachloronitrobenzene
	√78.		√121.	pentachlorophenol
		(dichloromethane)	√122.	peroxyacetic acid
	√78.	<ul><li>b. methyl chloride; (chloromethane)</li></ul>	<u>~123.</u>	phenol
	$\sqrt{78}$ .	<ul><li>c. methyl bromide; (bromomethane)</li></ul>	€124.	Phthalate esters
	<i>∠</i> 78.	d. bromoform; (tribromomethane)	u124.	a. butyl benzyl phthalate
	<b>78</b> .	e. dichlorobromomethane		b. diethyl phthalate
	√78.	f. trichlorofluoromethane	<u>124.</u>	
	V78.	g. dichlorodifluroomethane	$\sqrt{124}$ .	c. dimethyl phthalate
	√78.	h. chlorodibromomethane	√125.	piperonyl sulfoxide
			$\nu$ 126.	polybrominated biphenyls (PBB)
	79.	hexachlorobenzene (HCB)	∠127.	polychlorinated biphenyls (PCB)
	✓80.	hexachlorobutadiene	∠128.	polynuclear aromatic hydrocarbons
	<i>⊾</i> 81.	hexachlorocyclohexane	<b>128.</b>	a. 3,4-benzofluoranthene
	<b>√82.</b>	hexachlorocyclopentadiene	V128	b. benxo(k) fluoranthane;
	√83.	hexachloroethane	V 120	
	₩84.	hydrazobenzene	. 400	(11,12-benzofluoranthene)
	<i>√</i> 85.	hydroquinone	$ \omega_{128}. $	c. chrysene
	₩86.	N-(2-hydroxyethyl)ethyleneimine	∠128.	d. acenaphthylene
	₩87.	isophorone	<i>→</i> 128.	e. anthracene
	₩88.	lactonitrite	∠128.	<pre>f. benzo(ghi)perylene;</pre>
				(1,12-benzoperylene)
	∠ 89.	malachite green	<i>√</i> 128.	g. fluorene
	$\nu 90.$	methylenebis(2-chloroaniline)		h. phenathrene
	$\sqrt{91}$ .	4,4-methylenebis(2-methylaniline)	120	i. indeno(1,2,3-cd)pyrene;
	-92.	4,4-methylenebis(N,N-dimethylaniline)	Z120.	
	$\sim$ 93.	1,2(methylenedioxy)-4-propenyl	<b>/100</b>	(2,3-0-phenylenepyrene)
		benzene	128.	j. pyrene
	<i>∠</i> 94.	methyl hydrazine	✓128.	
	√95.	1-methylnaphthalene		1,3-propane sultone
	∠ 96.	2-methyl-l-nitroanthraquinone	<u>~130.</u>	B-proplolactone
			<b>√</b> 131.	5-propy1-1,3-benzodioxole
	√97.	mustard gas	$\nu$ 132.	propyleneimine
	√98. √00	1,5-naphthalenediamine		semicarbazide
	✓99.	1-naphthylamine	√134.	styrene
	<u>100.</u>	2-naphthylamine	∠135.	tetrachloroethylene(perchloroethylene)
	-101.	5-nitroacenaphthene	₩ 36.	thioacetamide
	<b>√</b> 102.	5-nitro-o-anisidine	∠137.	4,4-thiodianiline
L	<i>-</i> −103.	nitrobenzene		
·	<i>-</i> 104.	4-nitrobiphenyl	∠138.	thiourea
	<i>-</i> 105.	nitrogen mustard	<i>→</i> 139.	toluene
		2-nitrophenol	$\sim$ 140.	o-toluidine
	107.	4-nitrophenol	<i>س</i> 141.	o-toluidine hydrochloride
	108.	Nitrosamines	ن142.	triaryl phosphate esters
L	/108. /108.		$\sim$ 143.	1,1,2-trichloroethane
		a. N-nitrosodiphenylamine	<144.	trichloroethylene
-	<u> </u>	b. N-nitrosodi-n-propylamine	145.	trichlorophenols
L	<i>-</i> 109.	N-nitroso-n-butyl-N-(4-hydroxybutyl)	146.	2,4,5-trimethylaniline
		amine	~147.	
L	<b>∕</b> 110.	N-nitrosodiethylamine		trimethylphosphate
L		N-nitrosodimethylamine	<u>148.</u>	vinylchloride
		p-nitrosodiphenylamine	∠149.	xylene
L		N-nitroso-N-ethylurea		
		N-nitroso-N-methylurea	ORGAN :	ICS CONTINUED ON PAGE 3
ı	/ II3.	N-nitroso-N-methylurethane		

<u>A. I</u>	NORGANICS	PEST	ICIDES (Continued)
√150.	antimony	194.	chlorpyrifos
	arsenic	195.	
	beryllium	196.	
	cadmium	197.	
154.	chromium	198.	
√155.		199.	
156.	copper	200.	
157.	cyanides		diallate
158.	hypochlorite		diazinon
159.		203.	dibromochloropropane (DBCP)
160.		204.	dichlone
√161.		205.	
V 162.		206.	
	selenium	207.	
	silver		dimethoate
	thallium		dinocap
1/166.		210.	dinoseb
			dioxathion
B. I	NORGANICS	212.	disulfoton
	<del>, , , , , , , , , , , , , , , , , , , </del>	213.	endosulfan
√167.	acids	214.	endrin
$\nu$ 168.	chloramines	215.	
ر 169 س	chlorine	216.	
$\nu$ 170.	hydrazine		fensulfothion
✓171.	hydrogen sulfide		fenthion
	•		fluchloralin
C. I	NORGANICS	220.	
		221.	
, 172.	asbestos (fibrous)	222.	
		222.	
PESTI	CIDES	222.	
		222.	c. g-BHC-Delta
	aldicarb	223.	leptophos
	aldrin	224.	malathion
	4-aminopyridine		metabolites of DDT
176.	anilazine	225.	a. 4,4'-DDE;(p,p'-DDE)
177.	antimycin A	225.	<pre>b. 4,4'-DDD;(p,p'-TDE)</pre>
178.	,	226.	metabolites of endosulfan
179.	azinphos-methyl	226.	a. endosulfan sulfate
180.	barban	227.	metabolities of endrin
181.	bendiocarb	227.	a. endrin aldehyde
182.	benomyl	228.	metabolites of heptachlor
183.	bromoxynil	228.	a. heptachlor epoxide
184.	2(p-tert-butylphenoxy)-isoprophyl-	229.	methomyl
105	2-chloroethyl sulfite	230.	methoxychlor
185.	captafol	231.	methyl mercaptan
186.	captan	232.	methyl parathion
187.	carbaryl	233.	mevinphos
188.	carbofuran	234.	mexacarbate
189.	carbophenothion	235.	mirex
190.	chlordane	236.	monocrotophos
191.	chlordecone	237.	
192.	chlorfenvinphos	238.	nicotine
193.	chlorobenzilate	239.	
		240.	oxydemeton-methyl

# NON-DOMESTIC USER SURVEY FORM

I.	GENE	RAL	INFOR	RMATION

1.

2.

3.

4.

5.

Mead Products	Mead Products, Kalamazoo
Corporate Name	Plant Name
Courthouse Plaza N.E.	4141 Manchester Rd.
Address - Street and Number	Address - Street and Number
	•
Dayton, Ohio 45463	Volemene Wielie (000)
City Zip Code	Kalamazoo, Michigan 49001 City Zip Code
2.5 30.5	
	1-616-382-0390 Plant Phone Number
	Trans Thore Number
Troy Smith, Plant Engineer	1-616-382-0390
Name and Title of Person Completing Report	Phone Number
The information contained in this questionna	ire is familiar to me and to the bes
of my knowledge and belief, such information	
12 las las Magas VIII	ith Prove Flow
Date Signature of Responsib	ulh PLANT ENGIN Title Title
Signature of Responsite	The official field
Troy Smith	
Print or Type Name of R	osponsible Official
Frinc or Type Name of K	esponsible official
· · · · · · · · · · · · · · · · · · ·	,
	ool Supplies, Envelopes, Tablets,
Notebook Paper, Wire Bound Notebooks	
2642	2648
(	
Write the appropriate Standard Industrial Co	de (SIC) in the box above.
What types of waste(s) do you discharge to t	he sanitary sewer?
A. $(X)$ Sanitary B. $(X)$ Wash W	ater C. ( Rinse Waters
	s Waters F. Scrubber Waters
G. Other	
Do you use, store or discharge any acids, ba	ses or materials listed in Table I?
A. (X)Yes B. (No	
Does the operation of your processes or wast	ewater treatment facility result
in a residual residue or sludge type waste?	
A. ( )Yes B. (X)No	•
( )	

6.	Sch	edule d	of operation	ons:				-			
	A	2	.50	···	Number	of employe	es.				
	B	8	hrs/day	<u> </u>	5	days/wk	3	_shifts/day		12	_mos/yr
7.	Ā.=	If you of sur	answered	only A	to qu	estion thre	e(3), sign	and return	this	port	ion
						ree <u>(3)</u> is a		A, completo	e_Sec.t	ion.	II _
				Ka	1amazo	red, Indust o Wastewate Harrison		eillance Tech nt Plant	hnicia	n -	
II.	PRO	CESS AN	D PRODUCTS	s Ka	1amazo	o, Michigan	49007				
		on Tab tants list c name(s OSHA F	le I (the List). In contents or ) at this form 20 for	consoling the partial time.	idated se tra ackage You m such s	Critical Made name or particular indicate substance and ustance and	aterials L proprietor the trade ite the ma d provide	ed on the sit ist and Price ry chemicals name(s) and nufacturer to POTW with the chemical na	ority which manufato required	Polli do d actur uest essa	u- not rer's an ry
		SEE	E ATTACHED	COPIES	OF MS	SDS SHEETS	<b>–</b>			_	
				- ,				<u> </u>		<u> </u>	
	2.	Descri Bind	be each pr Paper to M	rocess ( Make En	(add sivelope	heets if needs, Tablets,	eded): Cu Loose Le	t, Fold. Glu af Notebook	le, Pr Paper	int, and	and
			Bound Note								
		AC	Yes 8	3.	No N	C. If ye	s, explai	be confident n_what and w o 40 CFR Par	thy (a)	II re	≘guests
	4.	Water	Supply: A	\(-X)M	lunici	pal B	)Well C.	Other,	expla	ain_	
-		D. Co	nsumption			00 Meters 3		ft <sup>3</sup> , gals pe			•
-		Co	nsumption		200	00 Meters 3,		ft <sup>3</sup> , gals pe	er time	e uni	( )
	-	Program		FR 112				l and Counte evention Pla			<b>;</b>
÷	-	A. C	X Yes	8. (	⊃No~-	<u>.</u>				~	
ī.	<u>.</u> .	 					w.	<u></u>	-	-	
Ç.	:	# <u>\$</u> * [.			- <u>.</u>						

## III. PROCESS WASTEWATER

	1.	Identify outfalls (circle):					
		A. Surface waters. Name of receiving waters:  B. Septic tank-file field. C. Surface of ground.  Municipal sanitary sewer.  E. Storm sewer.  F. Other, describe  (include line drawing(s) of process flows and all floor drain discharging to each outfall)					
	2.	Volumes of discharge: A. Average Daily Flow: 18,000 gallon per day B. Maximum Daily Flow: gallon per day C. Flow is: Measured 文 Estimated					
	3.	Type of wastewater:					
		A. % Process B. % Cooling 40 C. % Sanitary 40 D. % Other 20					
	4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?  A. Yes B. X No If yes, estimate area drainedsq. ft.					
IV.	DIS	DISPOSAL PRACTICES (add extra pages if necessary)					
	1.	How do you dispose of spent chemicals (explain)? Sewer for Wash Waters - Others to Landfill					
	2.	How do you dispose of spoilage (explain)?  A. Volume Disposed of: Unknown N/A					
	3.	How do you dispose of precipitates and/or sludges (explain)?N/A					
	•	A. Volume Disposed of:					
		Name of waste hauler: Waste Management of Mich. License No. EPA# MID00072215					
	5.	Do you have pretreatment for your wastes? A. Yes B. XNo					
	•	If box A is checked: Type:					
		Size:					
		If box B is checked, where and how are the wastes disposed of?					
		To sanitary sewer (X)  To storm sewer (					
		Industrial Waste Hauler (x) Other ()  If other, explain					

# - 4 - NON-DOMESTIC USER SURVEY FORM

6.		you have any air emission control equipment which would discharge to the er system? A. $\bigcirc$ Yes B. $\bigcirc$ No
7.	Are	any of the materials listed in Table I discharged with the wastes?
	A.	Yes B. No Unknown
		List by number from Table I:
٧.	SPI	LL PREVENTION (add extra pages if necessary)
	1.	List bulk materials stored on site (liquid, solids), (including cleaning agents).
		Material: Diesel Fuel Volume: 60,000 Gal. Location in plant: Buried Outside
	-	Material: PCB Volume: 500 Gal. Location in plant: In Transformer Outside
	2.	Is separate secondary containment provided for bulk materials?
		A. XYes B. No C. Some
	3.	Is separate secondary containment provided for those processes which contain chemicals listed in Table I?
		A. Yes B. XNo
	4	Has separate storage been provided for those chemicals which cause hazardous reactions, i.e., acid with cyanide, acids with bases? $_{\rm N/A}$
		A. Yes B. No
I.	SAM	PLING AND ANALYSIS
	1.	Are sampling points available for each: Yes
		A. Process Line Yes X No
		B. Outfall X Yes No
		Do you sample your process discharge(s)? Yes X No
	3.	Type of sample A. Grab B. Composited
		If Box B is checked, is sample composited to A. Flow B. Time
•	4.	Is a sampling vault and/or manhole provided? ———————————————————————————————————
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.): N/A
		The second secon
	6.	What laboratory analysis (wastewater/solids) can be run on site? None
	•	

#### VII. MISCELLANEOUS

1.	Describe any saf	precautions to be observed by those visiting at 1. Hard Hat for Warehouse Areas			
		2. Safety Glasses for Machine Shop			
2.	Contact Person:	Name Mr. Troy Smith			
		Title Plant Engineer			
		Phone Number 382-0390			

#### NON-DOMESTIC USER SURVEY FORM

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

## KALAM 7.00 WATER RECLAMATION PLANT INDUSTRIAL USER SELF-MONITORING REPORT

received

(1) Facility:	ity: Mead Products 4141 Manchester Road Kalamazoo, MI 49001			(2) Due Date: January 10, 1993 (3) Sample Point Code: WMP			
	Kalamazoo, N	11 49001			(3) Sample F	oint Code: vvi	MP
(4) Location:	Manhole in la	wn, west side	of the building	near the office.			
(5) Purpose fo	or Sampling:	✓ Routine pe □ Violation □ Other:	-	Period: <u>July 1, 1</u>	992 - Decemb	er 31, 1992	
(6) Sampling	Method:C	omposite s	amples col	lected with	n automati	c sampler,	
	gı	ab sample	s with man	ual operati	on of sam	pler.	
(7) Date and	Time of Compo	site Samples:	Start: 12/09	/92 - 11:30	A.MEnd: 1	2/10/92 -	12:00 P.M.
(8) Date and	Time of Grab S	amples: 1	2/10/92 -	12:00 P.M.	<del></del>		
(9)			RE	SULTS			
Parameter	<u>Value</u>	<u>Units</u>	Sample Type*	<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type*
Cadmium, T	<.005	mg/l	C	Mercury, T	<.0005	mg/l	C
Chromium, T	<.01	mg/l	<u>C</u>	Cyanide, T	<.01	mg/l	G
Copper, T	.13	_mg/l	C	pH	* <u>*7.3</u>	s.u.	G
Lead, T	<.03	_mg/l	C		<del></del>		
Nickel, T	<.02	mg/1	<u>C</u>				
Zinc, T	.13	mg/l	<u>C</u>				
* Sample Type:	G = Grab sample	C = Composit	e Sample			d with cal PH tester.	
(10) Name of	Laboratory	Mead Lab	······································		_ (Attac	ch copies of La	boratory Results
(11) Flow: A	verage Daily	7500 Gal.	/Day	Ma	ximum Daily	7500 Gal.	/Day
designed to who manag and belief, 1	assure that qualifi e the system, or the	ed personnel prop ose persons directl complete. I am a	erly gather and eval y responsible for gat ware that there are s	uate the information hering the informatio	submitted. Based n, the information s for submitting false	d on my inquiry of submitted is, to the	ordance with a system the person or person best of my knowledg uding the possibility o
<i>, '</i>	,						
	Mail to:	INDUS	TRIAL SERVICE	S RECORDS SPI	CIALIST		

INDUSTRIAL SERVICES RECORDS SPECIALIST
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

#### MEAD CORPORATION HUMAN & ENVIRONMENTAL TECHNOLOGY CENTER 3475 NEWMARK DR. MIAMISBURG, OHIO 45342

(513) 439-9234

FILE: AW-

LOCATION: KALAMAZOO DATE RECEIVED: 92 DEC 15

SUBMITTED BY: SMITH

COMMENTS.

LAB LOG # SAMPLE 10	SAMPLE DATE	ZIZVJANA	RESULTS	
923928				
PLANT WASTE WATER	921210	CADMI UM	< 0.005	MG/L
		CHROMIUM	<0.01	MG/L
		COPPER	0.13	MG/L
		LEAD	<0.03	MG/L
		MERCURY	<0.0005	MG/L
		NICKEL	<0.02	MG/L
		PCB-WATER	<20	UG/L
		PH	7.3	
		ZINC	0.13	MG/L

TEST METHODS ALL ANALYTICAL METHODS ARE IN ACCORDANCE WITH 40 CFR PART 136, OCT. 1984.

LABORATORY SUPERVISOR

DATE: 9310/108

MEAD CORPORATION HUMAN & ENVIRONMENTAL TECHNOLOGY CENTER 3475 NEWMARK DR. MIAMISBURG, OHIO 45342 (513) 439-9234

FILE: AW-

LOCATION: KALAMAZOO

DATE RECEIVED: 92 DEC 15

SUBMITTED BY: SMITH

COMMENTS:

LAB LOG #

SAMPLE ID

SAMPLE DATE

ANALYSIS

RESULTS

923936

PLANT WASTE WATER

921210

CYANIDE

<0.01

MG/L

TEST METHODS: ALL ANALYTICAL METHODS ARE IN ACCORDANCE WITH 40 CFR PART 36, OCT. 1984.

LAPORATORY SUPERVISOR

DATE: JAN 0 9

### KALAM ~7.00 WATER RECLAMATIC \* PLANT INDUSTRIAL USER SELF-MONITORING happort

(1) Facility:	Mead Produc			•	(2) Due Da	te: January 10,	, 1992
	4141 Manch Kalamazoo, I				(3) Sample	Point Code: W	MP
(4) Location:	Manhole in la	awn, west side	e of the building	near the office.		rece	<b>yed</b>
(5) Purpose fo	or Sampling:	□ Violation	periodic report. Resampling	Period: <u>July 1,</u>	1991 - Decen	nber 31, 1991	
(6) Sampling	Method: Com	posite Samp	les Collected	with Automa	itic Sampler	, Grab Sampl	es
	wit	h Manual Op	eration of Sa	mpler			
(7) Date and	Time of Compo	osite Samples:	Start: 11/7/	91 - 12:00 P	M End:	11/8/91 -	12:30 PM
(8) Date and T	Time of Grab S	Samples: <u>11</u>	/8/91 - 12:	37 PM			
(9)			RE	SULTS			
<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type *	Parameter	<u>Value</u>	<u>Units</u>	Sample Type*
Cadmium, T	<001	mg/l	<u> </u>	Mercury, T	<.0005	_mg/1	C
Chromium, T	< .005	mg/1	C	Cyanide, T	. 19	mg/l	G
Copper, T	.18	mg/l	C	pH :	* 8.6	S.U.	G
Lead, T	< .005	mg/l	C	РСВ, Т	<.01	mg/l	G
Nickel, T	<02	mg/l	C				
Zinc, T	. 08	mg/l	c	· · · · · · · · · · · · · · · · · · ·		<del></del>	
* Sample Type:	G = Grab sampl	e C = Composi	te Sample		Tested with		
10) Name of I	Laboratory	Mead Lab	·		(Atta	ach copies of La	boratory Result
11) Flow: Av	verage Daily	7500 Gal./I	)ay	Ma	aximum Daily_	7500 Gal./D	ay
designed to who manage	assure that qualif e the system, or th rue, accurate, and	ied personnel pro ose persons direct	nt and all attachment perly gather and eval lly responsible for gatl aware that there are s	uate the information hering the information	n submitted. Bas on, the information	ed on my inquiry of a submitted is, to the	the person or pers best of my knowled

Mail to:

INDUSTRIAL PRETREATMENT COORDINATOR Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, MI 49007-2565

## MEAD CORPORATION HUMAN & ENVIRONMENTAL TECHNOLOGY CENTER 3475 NEWMARK DR.

MIAMISBURG, OHIO 45342 (513) 439-9234 FILE: AW-

LOCATION.	KALAMAZOO	DATE	DECETVED.	0.1	NOV 13	

LOCATION: KALAMAZOO DATE RECEIVED: 91 NOV 13

SUBMITTED BY: SMITH

COMMENTS:

LAB LOG # SAMPLE ID	SAMPLE DATE	ANALYSIS	RESULTS	
914309				
PLANT WASTE WATER	911108	CADMIUM	<0.001	MG/L
		CHROMIUM	<0.005	MG/L
		COPPER	0.18	MG/L
		CYANIDE	0.19	MG/L
		LEAD	<0.005	MG/L
		MERCURY	<0.0005	MG/L
		NICKEL	<0.02	MG/L
		PCB-WATER	<10	UG/L
		ZINC	0.08	MG/L

TEST METHODS: ALL ANALYTICAL METHODS ARE IN ACCORDANCE WITH 40 CFR PART 136, OCT. 1984.

DATE: \_\_/\_\_/\_\_

LABORATORY SUPERVISOR

### SPILL PREVENTION CONTROL

AND

COUNTERMEASURE PLAN (SPCC)

AND

POLLUTION INCIDENT PREVENTION PLAN (PIPP)

MEAD PRODUCTS

KALAMAZOO, MICHIGAN 49001

٠.		
	•	
	TABLE OF CONTENTS	PAGES
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	RAW MATERIAL LISTING	2
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	CHEMICAL LISTING	,
•		2.4
	PART II. DESIGN AND OPERATION INFORMATION	9 - 14 .
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	SITE PLAN	
	STIL I LAN	
	PART III. SPILL CONTINGENCY PLAN	15 - 20
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	B. EXTERNAL ALERT PROCEDURE	
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,	D. SPILL CONTAINMENT	
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### FACILITY DESCRIPTION

The Mead Products, Kalamazoo plant is housed in a 400,000 square foot building. The number of employees will fluctuate between 200 and 300 employees.

We are primarily a paper <u>converting</u> operation that brings in rolls of paper to be used in producing writing products such as filler paper, tablets, envelopes, binders, spiral notebooks. The operations performed in our plant include sheeting, printing, ruling, cutting, gluing, stitching, and wire insertion. In addition, we warehouse and distribute miscellaneous products such as scissors, paper clips, protractors, pencils, erasers, etc.

Our water is supplied by the City of Kalamazoo and our sanitary waste is discharged into the city's sewer system.

As a part of our fire protection system, we have a 300,000 gallon water reservoir. As a back up in case of power failure during a fire, we have an auxiliary diesel powered pump. The pump is contained in a small building which also houses 250 gallons of diesel fuel for the pump. The pump is tested once a week. At that time the level of the diesel fuel is also checked. Any spillage from the tank would be contained in the building.

## MEAD PRODUCTS - KALAMAZOO DIVISION RAW MATERIALS & DELIVERED QUANTITIES

		APPROXIMATE
NAME	QUANTITIES	ANNUAL - USAGE
Newsprint	C/L	1,549,743 lbs.
Groundwood Content Paper	C/L	925,985 lbs.
Envelope Paper	C/L	5,402,600 lbs.
Free Sheet Writing Paper	C/L	25,050,447 lbs.
Uncoated Bristol	C/L	539,997 lbs.
Papeterie .	LT/L	33,217 lbs.
Light Weight Paper	LT/L ·	11,140 lbs.
Special Purpose Paper	LT/L	5,124 lbs.
Cover Paper	T/L	58,230 lbs.
Cover Paperboard	C/L	2,903,447 lbs.
Paperboard	T/L	471,802 lbs.
Kraft Wrapping	LT/L	44,223 lbs.
Film Overwrap	LT/L	198,898 lbs.
Containers Packaging	· T/L	7,747,731 ea.
Containers Shipping	T/L	1,670,578 ea.
Containers Shipping Displays	LT/L	154,810 ea.
Binding Materials	T/L	370,372 lbs.
Tape	LT/L	1,689,720 yds.
Adhesives .	LT/L	160,972 lbs.
Inks Ruling	LT/L	6,077 lbs.
Inks Printing	LT/L	3,869 lbs.
Purchased Components	LT/L	18,425,227 ea.
Hardboard (Unknown)	LT/L	

Railroad C/L - Car Load

T/L - Truck Load

LT/L - Less Than Truck Load

### SPILL PREVENTION CONTROL & COUNTERMEASURE PLAN

### PART I GENERAL INFORMATION

1.	Name of facility	Mead Products				
2.	Type of facility	Paper Converting			•	
3.	Location of facility	4141 Manchester 1	Road			
		Kalamazoo, Mich.	49002			
		Phone: (616) 38	32-0390			
4.	Name and address of o	wner or operator:				
	Name Mea	•				
		đ World Headquarte	ers			•
•		rthouse Plaza Nort			•	
	Day	ton, Ohio 45463	Phone: (513)	222-6323	•	
5	Designated person acco	ountable for oil spill i	orevention at facilit	v·· -		
٥.	Name and title					
_	_				· .	
6.	Facility experienced a (effective date of 40					174
			NT APPROVAL			
	This S	SPCC Plan will be imp	plemented as herei	n described.		
	Signature					
	Name H.	W. Sasser		•		
·	TitleDi	vision Manager				
		CERTI	FICATION			
	ereby certify that I have R. Part 112, attest that				-	
	ctices.			Works, Inc.	-	6
		•	By: Jack H	loward		
			Printed Name of I	Registered Pro	fessional Engine	;e1.
(Se	al)		Signature of Regis	stered Profess	ional Engineer	
					Ü	
Dat	С	·	Registration No	22023	State Mich.	

(Part I)

### GENERAL INFORMATION

### 7. Potential Spills - Prediction & Control:

Sou		or Type Failure		Total uantity <u>lloñs</u> )	Rate (bbls/hr)	Direction of Flow*	Secondary Containment	
Und	derground Ta	nks						
1.	#2 Fuel Oi	l Tank	Leak	29,975		Into Ground	No	
2.	#2 Fuel Oi	l Tank	Leak	29,975		Into Ground	No	
3.	#2 Fuel Oi	l Tank	Leak	1,100		Into Ground	No	
4.	Empty		•	****	٠.			
5.	Alcohol	Tank	Leak	247	•	Into Ground	No	
6.	Typewash	Tank	Leak	247		Into Ground	No .	
7.	Gasoline	Tank	Leak	247	, .	Into Ground	No	
Abo	Aboveground Tanks							
₁.	#2 Fuel Oi	Tank	Leak	247-	•	Into Ground	Yes - Pump House	

#### Discussion:

### Underground Tanks

Tanks #1 and #2 provide storage for #2 Fuel Oil which is used for emergency heater operations. Tank #3 stores #2 Fuel Oil for heater operation for pumphouse and water\_tank which keeps water storage from freezing. Tanks #4, #5, and #6 serve our pressroom for clean up of plates and presses. Tank #7 serves our tractors used around the plant and grounds.

### Aboveground Tanks

Tank #1 serves diesel fire pump engine.

Attach may if appropriate.

Name of facility	Mead Products	
Operator	Troy Smith	

### - PART I GENERAL INFORMATION

8.	Containment or diversionary structures or equipment to prevent oil from reaching navigable waters are practicable. (If NO, complete Attachment #2.)	N/A
9.	Inspections and Records  A. The required inspections follow written procedures.  B. The written procedures and a record of inspections, signed by the appropriate supervisor or inspector, are attached.  Discussion. Inspections of the facility are scheduled on a quarterly to detect weaknesses and detects before failures occur. A preventimaintenance program has been implemented to detect flaws and minimimechanical failure. Adequate records of these inspections are kept document and identify the actions taken, those involved, dates and Records of inspections are kept on the inspection report form and maintained for a period of three years.	ze to
10.	Personnel, Training, and Spill Prevention Procedures  A. Personnel are properly instructed in the following:  (1) operation and maintenance of equipment to prevent oil discharges, and  (2) applicable pollution control laws, rules, and regulations.  Describe procedures employed for instruction: Personnel handling critical rare instructed on an annual basis of the proper operation and maintenance of equipment to prevent spills. The existing oil pollution control rules and regulations affecting the facility are reviewed along with changes.	enance laws,
	B. Scheduled prevention briefings for the operating personnel are conducted frequently enough to assure adequate understanding of the SPCC Plan.  Describe briefing program: Briefing and maintenance sessions are held a Supervisors and material handling people are instructed of the natural hazards of chemicals of any oil used in their work areas, and the not steps to control any spillage or leakage of these materials as outly this plan. The briefing sessions include action that was taken on recent spills, failures, and malfunctioning components.	re and Pcessary ined in most
Ŋ	Name of facility Mead Products	
C	OperatorTroy Smith	

## MEAD PRODUCTS - KALAMAZOO CHEMICAL LISTING

CHEMICAL NAME OR TRADE NAME	LOCATION	INVENTORY	CONTAINER
Acetic Acid - 56%	М	l gal.	glass
Acetylene	M	150 cu.ft.	
Permanent Anti-Freeze	M	6 gal.	plastic
Spray Way Anti-Static Spray	R	l case	metal
Bleach Cleanser #411	J	l case	fibre crum
Boiler Water Treatment A5A	В	55 gal.	metal
Boiler Water Treatment LB71	В	55 gal.	metal
Brake Fluid Al-B Hvy. Dty.	M	2 gal.	metal
Bowl Cleanser #400	FC	24 qts.	plastic
Sani-Bea Bowl Cleanser	FC ·	l case	plastic
Coil and Fix Renovator D007 (Cleanser)	В	55 gal.	fibre crum
Tennant Concrete Primer #412	M	2 gal.	metal
Defoamer S & V	R & P	2 qts.	plastic
Degreaser Agent #435A	В	10 gal.	metal
Industrial Degreaser Formula 512M	M	l qt.	metal
Detergent Sanitizer #420	J	16 gal.	plastic
Deep Rock Compound	M	10#	fibre drum
Developer, Enco #5R54	P	4 gal.	plastic
Developer, Enco #660	P	7 gal.	plastic
Developer, 3M color-Key	Ρ.	l qt.	plastic
Staphasept Hospital Disinfectant Deo.	DP	6 cans	metal
Ditto Fluid	RL	6 gal.	
Risolene Engine Treatment	M	8 qts.	metal
Eutectic Castolin	M	36 oz.	plastic
Fountain Solution #40	P	5 gal.	plastic
Fuser Oil SR79-Silicone	T	60 oz.	plastic
Fixer Activator A-M	P	l gal.	plastic
Gasoline	М	20 gal.	metal
Carton Sealing Glue PN331B	R	1M#	metal
Envelope Back Gum, EG2311JRB	R	5M#	metal
Front Seal Envelope Glue, WB2301	R 	9M#	metal
Hot Melt (Brackett Stripper) HM2016	Floor	800 <i>#</i>	cardboard
J3700 XRN Case Sealing Adhesive	Floor	500# 500#	metal
Kraft Wrap Adhesive 11-0864	Floor	500#	plastic
Latex Padding Adhesive 5-S-5	Floor	500#	metal
Padlocker Hot Melt, HM4395	Floor	800# 300#	cardboard
Pot Devin Hot Melt PA-1431	R	300#	fibre crum
Gum Arabic #414	P P	5 gal. 250#	plastic
I.C. Compound	S		metal
Black-Marsh CM-l Pogo Ink Black-Marsh K-l Stencíl Ink	FC	12#	plastic metal
Red Ruling Ink 8646-S	RC	2 gal. 15#	
Ink Solvo 30	DP		metal
Ink Solvo Solution 617	В	2 qt.	plastic
Isopropyl Alcohol - 99%	underground	l gal. 250 gal.	plastic metal
Kerosene	M	6 gal.	metal
Dykema Layout Fluid	M	32 oz.	metal
Lithotine Plate Cleaner	P	32 02. 3 gal.	plastic
Loctite #404	M	1 oz.	plastic
Lusteron Dust-Mop Treatment	J	1 02. 2 gal.	metal
Lubricator, LPS-2	M	l qt.	metal
Lubriplate-Lubricants	M	1 qc. 7#	metal
Destrict Destruction	••	• •	

CHEMICAL NAME OR TRADE NAME	LOCATION	INVENTORY	CONTAINER
Multilith Cleanser & Disinfectant	77		
Deglazing Solvent 83-4-788004	DP	8 gal.	plastic
Keep-Eze Solution 200-726-4A	DP DP	l qt.	plastic
Platex Solution 40-2512-4A	DP	l qt.	plastic
Preservative Solution 40-2517-4A	DP	l qt.	plastic
Repelex Concentrate 200-722-4A	DP	l qt.	plastic
Oxygen	M	l qt. 244 cu.ft.	plastic metal
Oxy-Dry 5922 Anti-Offset Powder	P	20#	
Paint	м	6 gal.	bag metal
Petro Gum	P	l gal.	plastic
Phenolphthalein Indicator #611	В	1 qt.	plastic
Petroluim U.S.P. Alba	M	35#	metal
Potassium Chromate Indicator #628	В	1 qt.	plastic
Roller Wash - Y120	underground	300 gal.	
3-M One-Step Roller Wash	P	2 gal.	metal
Salt Pellets for Water Softener	В	lm#	bag
Snow Melt Salt	M	100#	bag
Seal Tonic	S	6 bx.	bag
Shellac	M	l gal.	-
Silicone Mold Spray, 76198 Economy	R	2 cases	
SBS 211 Soap	J	50#	fibre cans
Sani-Tuff	J	l case	plastic
Liquid Hand Soap - Sanifresh Gentle	J	2 gal.	plastic
Acid Solder	M .	1#	metal
Silver Solder	M	1# ⋅	
Blankrola Solvent 200-770-4A	P	l gal.	
Shellac Thinner Solvent 7T-38	M	l gal.	
Type R Norson Solvent	М	15 gal.	
Varco Motor Cleaner #22	M	40 gal.	
Spic & Span	FC	6 bx.	
Standard Silver Nitrate #6291 N/58.3	В	2 gal.	plastic
Subtractive Plate Developer - 3M	P	4 gal.	plastic
Type #5 Subtractive Plate Dev. Finisher	P	4 gal.	•
Subtractive Plate Gum - 3M	P	l gal.	plastic
Type #2 Subtractive Plate Preserver Transmission Fluid	P	6 qts.	plastic
Xerox Toner, 1020-#6R85	M T	10 qts. 4#	fibre drum
Urethane Finish #420 (Tennant)	M		plastic
Varn Copper Plating Solution	P	5 gal.	metal
Varn Revitol Glaze Remover	P	l gal. l gal.	metal metal
Varnish 08V5070	P	1 gal. 15#	metal
Varnish (Overprint) 1150	P	100#	metal
Wax	FC	6 bxs.	cardboard
Chesterton Chain Drive & Bushing Oil	M	10 qts.	metal
Chesterton Sprasolvo Pentrating Oil	М	4 qts.	metal
DTE Mobil Oil Oll	M	55 gal.	metal
DTE Mobil Cutting Oil 24	M	100 gal.	metal
Mobil Delvaco 1220 Oil	M	24 qts.	metal
Mobilmet 308	М	55 gal.	metal
Mobilmet S-127 DTE Extra Hvy.	M	55 gal.	metal
Mobilube HD 80-90 Oil		J	
Mobilux EP #1	М	5 gal.	metal
Mobilux EP #023	М	20 gal.	metal
NFO Anti-leak HYD Oil 1184	M	55 gal.	metal
Rarus 427 Mobil Lubricant	M	55 gal.	metal
Super 10W40 Oil	М	24 qts.	metal

CHEMICAL NAME OR TRADE NAME	LOCATION	INVENTORY	CONTAINER
CHEMICAL NAME OR TRADE NAME  Econoseal A-298 Hot Melt Instant LOK 34-2877 Hot Melt Case Seal X3801 Dow Corning Antifoam Emulsion Eugenol LC Muriatic Acid (Dupont) Spartan BH-38 Cleaner Inmont Flexogleen Ink KA-27058 Dye Blue New Blue 107 Ink Quuick Set Lacquer	LOCATION  Floor Floor Floor Floor Floor Floor Floor Floor Floor Floor Floor Floor Floor	1NVENTORY  200E 50# 500# 2 gal.  15 gal. 55 gal. 400# 500# 400# 2 gal.	fibre drum bag metal metal metal metal plastic metal metal
Industrial Solvent - S327 Xerox Developer #5R116 Aniline Seal Brown Ink Aniline Black Ruling Powder	Floor Office Floor Floor	110 gal. 2 ctns. 50#	plastic metal cardboard fibre drum fibre drum

### LOCATION CODE

М	-	Maintenance	В	-	Boiler Room
J	-	Janitor's Closet	DP	-	Data Processing
P	-	Pressroom	FC	-	Filler Area Cabinet
S	-	Shipping	T	-	Traffic
ER	-	Envelope Racks	RL	-	Roll Room

### PART II, ALTERNATE A DESIGN AND OPERATING INFORMATION ONSHORE FACILITY (EXCLUDING PRODUCTION)

	icility Drainage
	Drainage from diked storage areas is controlled as follows (include operating description of valves, pumps, ejectors, etc. (Note: Flapper-type valves should not be used): here are no existing or proposed dike storage areas other than the PCB
C	containment for the main plant transformer. In the event of a spill from the transformer into the dike, we would use our maintenance personnel plus
Ţ	one of the approved waste handling companies. Our maintenance personnel
ŀ	have been trained in the proper handling procedures.
•	
2.	Drainage from undiked areas is controlled as follows (include description of ponds, lagoras,
7	or catchment basins and methods of retaining and returning oil to facility):  The top of #1 and #2 oil tanks is covered with concrete pavement. The rest
	of the parking lot is asphalt. All drainage for this area is to a storm
5	sewer catch basin. The storm sewer drains into Davis Creek which is located
	about 1/4 mile from the plant. The remaining tanks drain into the grounc as they have dirt coverage.
1	they have dirt coverage.
3.	The procedure for supervising the drainage of rain water from secondary containment ito
	a storm drain or an open watercourse is as follows (include description of (a) inspection for
	pollutants, and (b) method of valving security). (A record of inspection and drainage events is to be maintained on a form similar to Attachment =3): The main plant transformer
	is diked to prevent spillage of Polycholorinated Byphenyl in the event of
	accident The enclosure is capable of containing the entire 495 gallons of
г	polychologinated Ryphenyl contained in the transformer. The dike contains i Va
ich	allows us to drain any accumulation of rain water while containing any Page
o di	ke is checked weekly. The maintenance personnel have been instructed
e u i	of the bazard of PCR and also the need for protective garments. Rubber 5.0ve:
	of the hazard of PCB and also the need for protective garments. Rubber cloves and boots are available for their use. If a spill should occur, this protect
,	olothing, after mopping up PCB, would be placed in a drum, sealed and picted
,	up by an authorized waste landfill handler for this material.
,	• -
Nan	ne of facility Mead Products
	T. Cutal
One	rator

## PART II, ALTERNATE A DESIGN AND OPERATING INFORMATION ONSHORE FACILITY (EXCLUDING PRODUCTION)

	Describe tank design, materials of construction, fail-safe engineering feature	s. and if
	needed, corrosion protection: All tanks are welded tanks and corrosion p	ntain hi
	Tank volumes are checked by stick measurement. The tanks do not co level alarms, pressure relief or overflow valves.	
	16161-q1941/2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	
		+1
2.	Describe secondary containment design, construction materials, and volume: All	tanks,
	with the exception of the 250 gallon pump house tank, are buried, there is no secondary containment. The pump house tank is inside t	<u>Ineretor</u>
	and any spillage would be contained inside the pump house.	
3.	Describe tank inspection methods, procedures, and record keeping: A physical	inventor
Ο.	is taken of the fuel oil and other fuels monthly. Records of all i	
	are kept in accordance with good accounting practices. Comparison	oī_actua
	inventories and book inventories is made monthly, and any abnormal	differen
	are promptly investigated.	
		<del></del>
٠1.	Internal heating coil leakage is controlled by one or more of the following control f	actors:
	(a) Manitaging the strong parties on subject lines for all	acturs.
	(a) Monitoring the steam return or exhaust lines for oil.	N/A
	Describe monitoring procedure:	N/A
		N/A
		N/A
		N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer,	N/A
	(b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.	N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer,	N/A
	(b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system. (c) Installing external heating systems.	N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are	N/A
	(b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system. (c) Installing external heating systems.	N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill	N/A H/A N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.	N/A H/A N/A
 5.	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.	N/A H/A N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.  Describe method and frequency of observations:	N/A H/A N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.  Describe method and frequency of observations:	N/A N/A N/A
	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.  Describe method and frequency of observations:	N/A N/A N/A
5.	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.  Describe method and frequency of observations:	N/A N/A N/A
<b>5</b> .	Describe monitoring procedure:  (b) Passing the steam return or exhaust lines through a settling tank, skimmer, or other separation system.  (c) Installing external heating systems.  Disposal facilities for plant effluents discharged into navigable waters are observed frequently for indication of possible upsets which may cause an oil spill event.  Describe method and frequency of observations:	N/A N/A N/A

-

# PART II, ALTERNATE A DESIGN AND OPERATING INFORMATION ONSHORE FACILITY (EXCLUDING PRODUCTION)

C.		cility Transfer Operations, Pumping, and In-plant Process  Corrosion protection for buried pipelines:	
	1.	(a) Pipelines are wrapped and coated to reduce corrosion.	No
		(b) Cathodic protection is provided for pipelines if determined necessary by elec-	
		trolytic testing.  (c) When a pipeline section is exposed, it is examined and corrective action taken	N/A
		as necessary.	<u>Yes</u>
	n	Pineline terminal connections are connect on blank florged and marked if the sine	
	۷.	Pipeline terminal connections are capped or blank-flanged and marked if the pipeline is not in service or on standby service for extended periods.	Yes
		Describe criteria for determining when to cap or blank-flange:	
		When a pipeline is not in service or on standby for a period of si months, the pipeline will be drained and capped or blank flanged.	x (6)
		months, the piperine will be drained and capped or brank tranged.	
			* **
	3.	Pipe supports are designed to minimize abrasion and corrosion and allow for	Yes
		expansion and contraction.  Describe pipe support design: Regular black pipe hangers were used	162
		Describe pipe support design.	
	-		
	4.	Describe procedures for regularly examining all above-ground valves and pipeline ing flange joints, valve glands and bodies, catch pans, pipeline supports, locking and metal surfaces): Visual inspections are made weekly. In addition quarterly inspections are made.	of valves
<b></b> ··			
-	<b>5.</b> <sub>.</sub>	Describe procedures for warning vehicles entering the facility to avoid damagi ground piping: All-piping is underground and free from any vehicula damage.	ng above r
	Nar	ne of facility Mead Products	
		Trov Smith	
	ope	erator	

# PART II. ALTERNATE A DESIGN AND OPERATING INFORMATION ONSHORE FACILITY (EXCLUDING PRODUCTION)

Đ.	Fa	cility Tank Car & Tank Truck Loading/Unloading Rack	
	Τa	nk car and tank truck loading/unloading occurs at the facility. (If YES, complete hrough 5 below.)	Yes
	1.	Loading/unloading procedures meet the minimum requirements and regulations of the Department of Transportation.	Yes
	2.	The unloading area has a quick drainage system	No
	3.	The containment system will hold the maximum capacity of any single compartment of a tank truck loaded/unloaded in the plant.  Describe containment system design, construction materials, and volume: We do not containment system that will accompodate the tank load during transfuel oil, gasoline, and typewash is delivered by commercial trucks all suppliers of the necessity of their drivers chocking and remainship truck during delivery. Tank Truck Loading Procedure: Ensure	sfer. C.r s. <u>We a</u> cvise ining at
-	4.	tank truck trailer is properly spotted for unloading oil - set branches blocks behind both front and rear tires. Ensure tank is proceed to be sure productions. Read level guage prior to discharging oil to be sure tank	kes and perly vented.  Is are not has adequate Driver shall quiloacing of materia; into In the case covered with water.  Tould be blocked
	· <b></b>	of transfer lines.  Describe methods, procedures, and/or equipment used to prevent premature departure:  The requirement that all venicles unloading pollutants must chocked, that the driver remain during unloading has been communication.	
		our suppliers and our internal personnel. See Appendix A for addinstructions.	
	5.	Drains and outlets on tank trucks and tank cars are checked for leakage before loading/unloading or departure.	Yes
;	ian	ne of facility	
(	)pe	Troy Smith	

## PART II. ALTERNATE A DE. N AND OPERATING INFORMATI ONSHORE FACILITY (UNCLUDING PRODUCTION)

F.	Sec	ecurity -	
	1.	Plants handling, processing, or storing oil are fenced.	No
	2.	Entrance gates are locked and/or guarded when the plant is unattended or not in production.	N/A
	3.	Any valves which permit direct outward flow of a tank's contents are locked closed when in non-operating or standby status.	No
•	4.	Starter controls on all oil pumps in non-operating or standby status are:  (a) locked in the off position;  (b) located at site accessible only to authorized personnel.	No Yes
	5. 	Discussion of items 1 through 4 as appropriate:  The Company has three 8-hour shifts, which puts personnel on hand 24 per day. On holidays and weekends, the plant is protected against fi entry by ADT System. The ADT Company has the names and telephone numb who to reach in case of an emergency.	re and
A.			
	•		
•			
: <u></u> : 72 - <u> </u>	- 6 	Discussion of the lighting around the facility:  There is adequate lighting at the transfer area to permit surveillance the facility.	e of
- •	·	· · · · · · · · · · · · · · · · · · ·	•
			<del>_</del>
	Nor	me of facility Mead Products	
,		eratorTroy Smith	

### A. INTERNAL ALERT PROCEDURE

NAME, TITLE AND TELEPHONE NUMBER OF PERSONS RESPONSIBLE FOR OIL SPILL PREVENTION AT FACILITY

Harry Sasser, Plant Manager

11086 East "G" Avenue

Galesburg, Michigan 49053 Phone: (616) 665-9511

Jerry Kurth, Operations Manager

4797 S. 36th Street

Climax, Michigan 49034 Phone: (616) 665-9091

Troy Smith, Chief Engineer

5135 Citadel

Parchment, Michigan 49004 Phone: (616) 344-4884

Jerry Winowiecki, Maintenance Supervisor

1810 Tamfield

Portage, Michigan Phone: (616) 329-0876

Clare Ditto, Maintenance Supervisor

567 N. Marshall

Marshall, Michigan 49068 Phone: (616) 781-2331

In the event of a spill, the Plant Manager, or in his absence, the highest ranking person available on the internal alert listing, shall notify those agencies specified in the external alert procedure as well as the Mead Products V.P. of Operations and the Mead Environmental Protection group at 513-222-6323.

### A. INTERNAL ALERT PROCEDURE

NAME, TITLE AND TELEPHONE NUMBER OF PERSONS RESPONSIBLE FOR OIL SPILL PREVENTION AT FACILITY

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Clare Ditto, Maintenance Supervisor

567 N. Marshall

Marshall, Michigan 49068 Phone: (616) 781-2331

### B. EXTERNAL ALERT PROCEDURE

In case of an emergency which concerns a spill or leak, owner/operator or designated person shall immediately notify the following:

Department of Natural Resources - D.N.R. (State)

In case of a spill event, notify the D.N.R. Water Quality Division District No. 3 office at the following number:

District No. 3 office: (616) 456-6231

If unable to contact D.N.R. personnel at the above number, contact one of the following:

Chester Harvey: (616) 361-8177 Bob Babcock: (616) 363-8473 Gene Mogg: (616) 669-1506

If unable to contact one of the above persons, notify the D.N.R. at the following 24 hour D.N.R. Pollution Emergency Alert System Number:

24 Hour D.N.R. Number: (517) 373-7660

Within ten (10) days, a written report must be filed describing the cause, extent of loss, the material involved, and the corrective measures taken.

National Response Center (Federal)

Any person, as soon as he has knowledge of any discharge or oil or a hazardous substance, shall immediately notify, by telephone, radio telecommunication, or a similar means of rapid communication, the Duty Officer, National Response Center, U.S. Coast Guard, 400 Seventh Street, S.W., Washington, D.C. 20590, at the following number:

24 Hour N.R.C. Number: (800) 424-8802 (Toll-free)

(ADD KAZAMAZOU WASTE WATER TREATMENT PLANT - MR. BRUCE MERCHANT - 385-8157 FOR SPILLS TO SANITARY SEWER SISTEM)

### C. NOTIFICATION INFORMATION

The following information will be given when making notification:

- Caller's name
- 2. Company name and location
- 3. What material spilled
- 4. How much was spilled
- 5. Was it contained
- 6. Clean up action and assessment of environment damage.

### D. SPILL CONTAINMENT

As discussed elsewhere, our spill containment procedures are as follows:

- - 2. The three small capacitors located in the roll storage, maintenance room, and the manufacturing area only contain I gallon per unit. If an accident occurred, the PCB could not reach the exterior of the building. Instructions for handling the PCB in case of a spill, are posted at the transformer and each capacitor. Key personnel have also been instructed in the proper handling of PCB.
  - 3. The gasoline and fuel oil in the underground tanks is measured monthly to detect leaks. Instructions for proper handling during delivery have been promulgated to our suppliers, as well as to our key employees. The small above ground tank would spill into the pump house and be contained in case of a leak.
    - 4. Our boiler room contains no pollutants other than the chemical used in treating the boiler water. In case of a spill, this water goes into the sanitary drain rather than the storm drain, and therefore does not go directly into the environment.

#### POLYCHLORINATED BYPHENYL

We have PCB in the following three places in our plant:

- 1. Main Plant Transformer
- 2. Capacitors (3)
- 3. Fluorescent Light Fixtures Ballasts

The main plant transformer contains 495 gallons, the capacitors 1 gallon each, the fluorescent light fixture ballasts two fluid ounces each.

The main plant transformer sets outside the building, it is diked, and is very well protected from a possible accident or bumping by a vehicle. We are inspecting the transformer monthly looking for leaks and deterioration. We are also keeping records of these inspections.

The maintenance personnel have been instructed of the hazard of PCB and also the need for protective garments. Rubber gloves and boots are available for their use. If a spill should occur, this protective clothing, after mopping up PCB, would be placed in a drum, sealed and picked up by an authorized waste landfill handler for this material.

Should a spill occur, we would make certain that none of the PCB reaches the storm or sanitary sewers.

We also are replacing the ballasts of our fluorescent light fixtures with a "non-containing PCB" ballasts as they need replacing.

### E. SPILL CLEAN UP

Spills of contaminates of minor amounts will be contained with a supply of absorbent material on hand. Any waste absorbent materials used will be disposed of at an approved sanitary landfill site.

When spills of contaminates of large amounts cannot be handled by facility personnel, then one of the haulers listed in the state's list of approved waste handlers will be contacted. Approved waste handlers for emergency containment and clean up must be contacted if there is a chance that the waters of this state would be polluted by a spill.

Following is a list of State of Michigan licensed liquid waste handlers to assist us in containing, cleaning up, or disposing of the remains of a spill:

1. R. A. Daggett Company
7171 Portage Road
Kalamazoo, Michigan
President: R. A. Daggett

Business Phone: (616) 382-4000, ext. 3810
Residence Phone: (616) 629-5161

2. A. 1 Disposal, Inc.—————Business Phone: (616) 685-6273
118 East Bridge Street Residence Phone: (616) 792-2024
P. O. Box 301
Plainwell, Michigan 49080
President: Dick Shumaker

3. Land and Lakes Environmental Business Phone: (616) 243-4607 750 Himes, S. E. (24 Hour Service) Grand Rapids, Michigan

### APPENDIX A

### TANK TRUCK UNLOADING PROCEDURE

- 1. Ensure that tank trailer is properly spotted for unloading oil set brakes and place blocks behind both front and rear tires.
- 2. Ensure tank is properly vented.
- Compare tank trailer number to shipping invoice to be sure products are not mixed.
- 4. Read level guage prior to discharging oil to be sure tank has adequate volume.
- 5. Inspect discharge piping for leakage before departure.
- 6. Driver shall remain in direct visual observance of transfer at all times during unloading of product. Driver will be responsible for the safe transfer of the material into the tank.
- 7. Place a sign "CAUTION NO SMOKING" during unloading operation.

SUPPLY APPENDIX RETURN GAUGE . VENT 12 - 18 " MANHOLE 46-6" 36" 45839": 24"

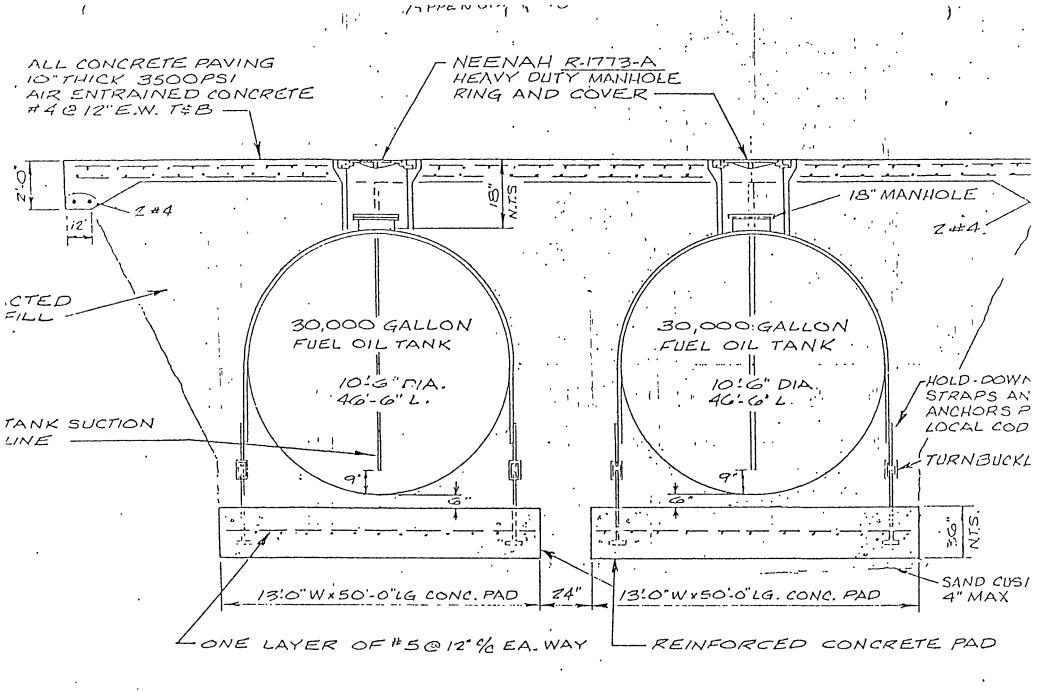
### FUEL OIL STORAGE TANKS - 2 REQ'D

- 318" STEEL PLATE THROUGHOUT
- EUTT WELDED CONSTRUCTION
- UL FOR UNDERGROUND INSTALLATION
- MANHOLC TO HAIR BOLTED AND GASKETED COVER
- SERVICE OPINGS 4" NPT THREADED
- SHOP COATED (2) COATS KOPPERS 450 BITUMASTIC
- TO INCLUDE ((5) FIET A" HOLD-DOWN STRAPS WITH I'S TURNEUCKLES AID ANCHOR BOLTS FOR EACH TANK (C) 12 x cl
- MANUFACTURER STEEL TANK : FAERICHTING G.

MEAD PRODUCTS 4141 MANCHESTER KALAMBEOD, INICHIGHN

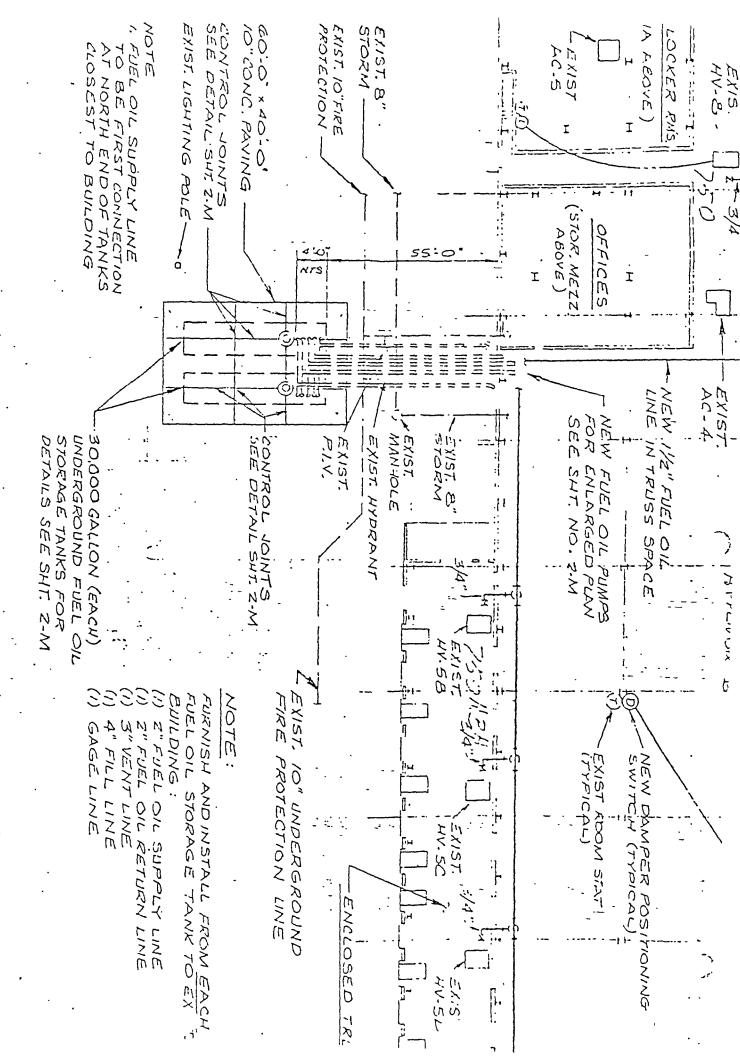
ASSOCIATED MECHANICAL SERVICES MECH. CONTR.

BONL SUPPLY CEMPANY



UNDERGROUND FUEL OIL STORAGE TANKS

SCALE 1/4"=1'-0"



÷.

APPENDIX C

INSPECT: ! REPORT

FACILITY Mend Prod	ucts	DATE			
INSPECTOR		INSPECT	ION QUARTERLY	•	
Item	General Condition Satis, Unsatis,	Remarks	Date of Repairs	Repairmon	
TANK #1 - #2 FUEL OIL					
TANK #2 - #2 FUEL OIL		,			
TANK #3 - #2 FUEL OIL					
TANK #4 - EMPTY					
TANK #5 - ALCOHOL	·		·		
TANK #6 - TYPEWASH		·			
TANK GAUGES					
YARD LIGHTING		,			
ABSORBENT SUPPLY					
INTEGRITY OF CONCRETE - ASPHALT				,	
FUEL OIL PUMPS	,		i		
TRANSFORMER					
CAPACITOR					

Mead Anoducts

4141 Manchester Road Kalamazoo, Michigan 49002

Telephone: 616-382-0390

This plan was reviewed by Mead Products management in April, 1984.

Persons reviewing were Will Lapp, Troy Smith, and Harry Sasser.

Troy Smith



## UNITED STATES 'IRONMENTAL PROTECTION AGE \_Y REGION V

ENVIRONMENTAL SERVICES DIVISION 536 SOUTH CLARK STREET CHICAGO, ILLINOIS 60605

### TO WHOM IT MAY CONCERN

The purpose of this letter is to introduce you to Craig Bell and to notify you of the reason for this visit.

Craig Bell is an employee of Roy F. Weston, Inc., which is under contract to the United States Environmental Protection Agency to inspect industrial facilities for compliance with Title 40, Part 112 of the Code of Federal Regulations - Oil Pollution Prevention. Roy F. Weston employees are considered to be representatives of the United States Environmental Protection Agency for the purpose of this inspection.

This inspection will determine whether or not a plan is required at your facility, whether or not a plan exists at your facility, and whether or not it has been implemented at your facility.

It is possible that this inspection will result in finding that your facility is in violation of the Regulations which may result in corrective enforcement action involving penalties as provided by the Regulations.

The inspector is familiar with the technology of oil spill prevention and control. He may offer suggestions or advice regarding how your spill prevention program can be improved. Such advice is offered for your assistance and is not to be construed as official requirements.

If you have any questions regarding this inspection, please contact Mr. Robert J. Bowden at 312-353-2071.

Willen H. Gendern H

William H. Sanders III, P.E. Director

#### FMVIRORMENTAL PROTECTION AGENTY

#### 40 CFR Part 112

#### OIL POLLUTION PREVENTION

APPLICABILITY: Applicable to non-transportation-related onshore and offshore facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, or consuming oil and oil products, except:

- (1) Facilities with total above-ground storage capacity of 1,320 gallons or less, provided no single container is larger than 660 gallons.
- (2) Facilities with buried storage capacity of 42,000 gallons or less, or
- (3) Facilities which, due to their location, could not reasonably be expected to discharge oil into or upon navigable waters of the U.S. or adjoining shorelines.

REOUIREMENTS: Requires preparation and implementation of SPCC Plans to minimize the potential for oil discharges. SPCC Plan must be certified by a Professional Engineer.

Existing Facilities:

- (1) Shall prepare an SPCC Plan within 6 months of effective date of regulations (1/10/74).
- (2) Shall implement as soon as possible but not later than one year after the effective data of regulations.

New Facilities:

- (1) Shall prepare an SPCC Plan within 6 months of date facility begins operation.
- (2) Shall be fully implemented as soon as possible but not later than one year after such facility begins operations.

Mobile or Portable Facilities

(1) Mobile or portable facilities shall have at SPCC Plan prepared in accordance with the guidelines. When facility is moved, it should be located and installed using spill prevertion practices outlined in the SPCC Plan. The SPCC Plan shall apply only while the facility is in a fixed operating mode.

AVAILABILITY: A copy of the SPCC Plan shall be maintained at the facility if the facility is manned at least 8 hours/day, or at the nearest field cifice if facility is not manned, and be made available to the Regional Administrator for on-site review during normal working hours.

EXTENSIONS OF TIME: Extensions of time may be authorized by the Regional Administrator for preparation and full implementation of an SPCC Plan. Conditions for extensions are:

Non-availability of qualified personnel

(2) Delays in construction

Delays in equipment delivery

which are beyond the control of the owner or operator

FOR FURTHER INFORMATION CONTACT:



U.S. ENVIRONMENTAL PROTECTION AGENCY REGION V EMEPGENCY RESPONSE TEAM

ROSS E. POWERS OIL AND HAZARDOUS MATERIALS COORDINATOR

#### SPILL PREVENTION, CONTROL AND COUNTERMEASURE REGULATIONS

#### Legal Authority and Purpose

In 1973, the U.S. Environmental Protection Agency (EPA) issued Oil Pollution Prevention Regulations (40CFR112). The purpose of the regulation was to prevent oil spills from nontransportation—related facilities engaged in drilling, producing, gathering, storing, processing, refining, transferring, distributing, or consuming oil. The regulations require designated facilities to prepare and implement a site-specific Spill Prevention Control and Countermeasure Plan (SPCC Plan) in accordance with good engineering practices. To verify implementation of SPCC Plans, EPA has authority to conduct SPCC site inspections.

#### Facilities Covered by SPCC Regulations

SPCC regulations apply to nontransportation-related facilities in proximity to navigable waters that possess the following oil storage capacities:

- 1. Non-buried aggregate storage capacity greater than 1320 gallons or -
- 2. Non-buried storage capacity greater than 660 gallons in a single container or -
- --- 3. Buried storage capacity in excess of 42,000 gallons

#### Basic Required Features of SPCC Plans

SPCC Plans should be site specific and must be certified by a Professional Engineer. Appropriate containment such as curbing, culverting, wiers, booms, diversion ponds, sorbent materials, etc, should be provided to prevent oil from reaching navigable waters.

Plans, in essence should provide for:

- 1. Containment of 110% of the volume of the largest tank.
- 2. A warning system for overflows
- 3. A rapid communication system for employees to make emergency notification in the event of a spill.

STATE OF MICHIGAN



NATURAL RESOURCES COMMISSION
THOMAS J ANDERSON
E R CAROLLO
MARLENE J FLUHARTY
STEPHEN F MONSMA
O STEWART MYERS
RAYMOND POUPORE

HARRY H WHITELEY

JAMES J. BLANCHARD, Governor

#### DEPARTMENT OF NATURAL RESOURCES

RONALD O. SKOOG, Director

Plainwell District Headquarters Box 355, Plainwell, Michigan 49080

January 17, 1985

Troy Smith
Mead Products
4141 Manchester Road
Kalamazoo, Michigan 49002

Dear Mr. Smith:

This is to confirm my January 9, 1985 investigation of your operations. The purpose of the visit was to determine your compliance with the rules of the Michigan Air Pollution Control Commission.

As a result of my evaluation, I observed the following emission sources:

- -- one gas/oil-fired boiler, 40-hp by your estimate
- -- two offset printing presses, using inks with alcohol
- -- one ink powder mixing area with hood
- --solvent used for printing press clean-up
- --many gas-fired air makeup units
- --cyclone collector for waste paper cuttings

All of the above sources appeared to be in compliance with the applicable rules. If the volume of ink powder mixing increases in the future, a filter system should be installed. Please be reminded that prior to installing new equipment which may have emissions, a permit is required.

Thank you for your cooperation in the matter. If you have any further questions, please feel free to contact this office.

Sincerely

Dale Turton, Environmental Engineer Air Quality Division - Plainwell

(616) 685-9886

DT:1s

R10261 ......

TO: ALL EMPLOYEES

SUBJECT: POLICY CHANGE - DRUMS A/O CONTAINERS

AS A RESULT OF MORE STRINGENT GOVERNMENT REGULATIONS, IT IS ESSENTIAL THAT THE COMPANY INSURES THE FINAL DISPOSITION OF ALL DRUMS AND CONTAINERS FROM THE PLANT. THE PAST PRACTICE OF ALLOWING EITHER METAL DRUMS OR OTHER EMPTY CONTAINERS TO LEAVE COMPANY PROPERTY WITH UNKNOWN FINAL AND ULTIMATE DISPOSITION IS NO LONGER ACCEPTABLE IF WE ARE TO COMPLY WITH GOVERNMENTAL REGULATIONS.

FOR THE ABOVE REASON, EFFECTIVE IMMEDIATELY, NO DRUMS OR CONTAINERS WILL BE GIVEN TO EMPLOYEES. ALL DRUMS AND CONTAINERS WILL BE RETURNED TO THE SUPPLIERS AND/OR BE DISPOSED OF THROUGH A LOCAL DRUM DEALER.

WE TRUST YOU WILL UNDERSTAND THIS NECESSARY POLICY CHANGE TO PROTECT THE COMPANY IN VIEW OF CURRENT AND PENDING ENVIRONMENTAL REGULATIONS.

GERALD A. KURTH

OPERATIONS MANAGER

G.A. Kuth

GAK/mcg

# NON-DOMESTIC USER SURVEY FORM

I. GENERAL INFORMATION

1.

2.

3.

4.

5.

National Gypsum Co	o	Gold Bond Bu	ilding Products
Corporate Name		Plant Name	
4100 First Interna	ational Bldg.	2305 King Hi	ghway
Address - Street and			reet and Number
Dallas, Texas	75270	Kalamazoo	49003
City	Zip Code	City	Zip Code
		(616) 343-1 Plant Phone Nur	
John P. Schieberge	n Droces Fns	i neer	(616) 343-1579
Name and Title of Person			Phone Number
	gnature of Respons	wer	Plant Manager Title
Nature of business: <u>Ma</u>	nufacture paper	rboard from repu	ilped waste paper
<u> </u>		\	
(2631)	) Other		)
Write the appropriate St	andard Industrial	Code (SIC) in the	box above.
What types of waste(s)	o you discharge to	o the sanitary sewe	er?
A. (X) Sanitary	B. Wasi	n Water C. (	Rinse Waters
D. Cooling Water	E. X Prod	cess Waters F. (	Scrubber Waters
G. Other	~ <del></del>		
Do you use, store or dis	charge any acids,	bases or materials	listed in Table I?
	No		
Does the operation of your in a residual residue or	ur processes or wa sludge type waste	astewater treatment e?	facility result
A. ( )Yes B.	(X)No		

6.	Sch	edule of operations:						
	Α	77	_Number of	employees.				
	В	hrs/day	7	days/wk	3	shifts/day	12	_mos/yr
7.	Α.	If you answered only of survey form.	A to quest	ion three(3),	, sign	and return this	s port	ion
	В.	If you answer to questhrough VIII of this	tion three form, sign	(3) is other it, and retu	r than urn to:	A, complete Sec	ction	II
II.	<u>PRO</u>	K 1	alamazoo W 415 N. Har	astewater Tre	eatment	llance Technic Plant	ian	
	1.	Provide a complete ligon Table I (the consotants List). If you list contents on the name(s) at this time.  OSHA Form 20 for each information when available	lidated Cr use trade i package, ii You must such subs	itical Materi name or propr ndicate the t also write t tance and pro	ials Li rietory crade n che man ovide P	st and Priority chemicals whice ame(s) and manu ufacturer to re OTW with the ne	Pollich do in facture equest excessa	u- not rer's an ry
			19) (169					
	2.	Describe each process Used in paper man	-					<u> </u>
	3.	Is any of the enclosed A. Yes B. (for confidentiality w	X No (	. If yes, e	xplain	what and why (	all re	
					<del></del>	····		·
	4.	Water Supply: A. (X	Municipal	B. 🔼 Wel	1 C.	Other, exp	lain_	
		D. Consumption Used:  Consumption Total:	B. 1	60 GPM 20 GPM 80 GPM		t <sup>3</sup> , gals per ti t <sup>3</sup> , gals per ti		
	5.	Does your facility have Program (SPOC) CFR 112 MDNR Rule five (5).	e a Spill	Prevention C				i
		• ( )						

### III. PROCESS WASTEWATER

	1.	Identify outfalls (circle):			
		A. Surface waters. Name of receiving waters:  B. Septic tank-file field. C. Surface of ground.  Municipal sanitary sewer.  E. Storm sewer.  F. Other, describe  (include line drawing(s) of process flows and all floor drain discharging to each outfall)			
	2.	Volumes of discharge: A. Average Daily Flow: 50,000 gallon per day B. Maximum Daily Flow: 451,000 gallon per day C. Flow is: X Measured Estimated			
	3.	Type of wastewater:			
		A. % Process <u>52</u> B. % Cooling <u>43</u> C. % Sanitary <u>5</u> D. % Other			
	4.	Are drains (roof, parking lot, etc.) discharging into the sanitary sewer?  A. $X$ Yes B. $N$ No If yes, estimate area drained $10,000$ sq. ft.			
IV.	DIS	SPOSAL PRACTICES (add extra pages if necessary)			
	1.	. How do you dispose of spent chemicals (explain)?			
	2.	A. Volume Disposed of:  How do you dispose of spoilage (explain)?			
	3.	How do you dispose of precipitates and/or sludges (explain)?			
	4.	Name of waste hauler: License No			
		Do you have pretreatment for your wastes? AYes BX_No			
		If box A is checked: Type:  Size: Frequency of Operation:			
		If box B is checked, where and how are the wastes disposed of?			
		To sanitary sewer X To storm sewer C Industrial Waste Hauler Other C If other, explain			

6.	Do sew	you have any air emission control equipment which would discharge to the er system?  AYes BNo
7.	Are	any of the materials listed in Table I discharged with the wastes?
	Α.	X Yes B. No
	C.	List by number from Table I: 1 (149) (
٧.	SPI	LL PREVENTION (add extra pages if necessary)
	1.	List bulk materials stored on site (liquid, solids), (including cleaning agents). Refer to additional sheet.
		Material: Volume: Location in plant:
		Material: Volume: Location in plant:
	2.	Is separate secondary containment provided for bulk materials?
		A. Yes B. No C. XSome
	3.	Is separate secondary containment provided for those processes which contain chemicals listed in Table I?
		A. XYes B. No
	4.	Has separate storage been provided for those chemicals which cause hazardous reactions, i.e., acid with cyanide, acids with bases?
		A. X Yes B. No
ï.	SAMI	PLING AND ANALYSIS
	1.	Are sampling points available for each:
		A. Process Line (X)Yes (No
	_	B. Outfall XYes No
		Do you sample your process discharge(s)? (X) Yes No
	3.	Type of sample A. X Grab B. Composited  If Box B is checked, is sample composited to A. Flow B. Time
	4.	Is a sampling vault and/or manhole provided?  A. XYes B. No
	5.	Sampling schedule (i.e., 24-hour, during working hours, etc.):
		Intermittent
	6.	What laboratory analysis (wastewater/solids) can be run on site?
		Suspended solids, total dissolved solids, PH, conductivity.

#### VII. MISCELLANEOUS

1.	Describe any safety precautions to be observed by those visiting at your site:				
	1) Go to plant office.				
	2) Obtain personal safety equipment.				
	3) Obtain general plant safety information, i.e., no smoking				
	areas, locations of fork truck traffic, etc.				
2.	Contact Person: Name J. B. Harvey				
	Title Plant Manager				

#### NON-DOMESTIC USER SURVEY FORM

Phone Number (616) 343-1579

- PRETREATMENT: The treatment of a wastewater contribution, at the point of origin, prior to release to a public sewer or collection system.
- PROCESS WATERS: Waters that come in contact with an end product or with materials incorporated in an end product.
- SAMPLE, COMPOSITE: A composite sample should contain a minimum of eight (8) discrete samples taken at equal time intervals over the compositing period or proportional to the flow rate over the compositing period (EPA).
- SAMPLE, GRAB: A sample which is taken from a waste stream on a one-time basis with no regard to the flow in the waste stream and without consideration of time (EPA).
- SECONDARY CONTAINMENT: If a tank or vessel storing a chemical ruptures, the secondary containment structure will prevent the loss of the chemical to the environment. Secondary containment should be provided with a volume of 150% of the storage vessel. All potentially polluting materials such as oil, acid, cyanide, etc., should be stored within a secondary containment structure, usually a concrete wall or earthen dike.
- SPENT CHEMICALS: Chemicals that have exhausted their usefulness.
- STANDARD INDUSTRIAL CODE (SIC): This is a way of identifying industrial types with a four digit code. A manual with the codes is entitled the <u>Standard Industrial Classification Manual</u> and is available in the reference section of most libraries.

### TABLE I

The following is a list of the U.S. EPA Priority Pollutants consolidated with the current Critical Materials Register compiled by the Michigan Department of Natural Resources.

### ORGANICS

	<u>OF</u>	RGANICS	
1.	acids	37.	bis(2-chloromethyl) ether
2.		<b>38.</b> .	3-(chloromethyl) pyridine hydrochloride
3.		39.	1-(4-chlorophenyl)-3, 3-dimethyl triazene
4.	2-acetylaminofluorene	40.	
5.	acrolein	41.	
6.	acrylic acid		chloroprene
7.	acrylonitrile	.43	5-chloro-o-toluidine
8.	allyl chloride	44.	p-cresidine
9.	2-aminoanthraquinone		2,4-diaminoanisole sulfate
10.	aminoazobenzene ´	46.	4,4-diaminodiphenyl ether
11.	o-aminoazotoluene	47.	2,4-diaminotoluene
	4-aminobiphenyl	48.	dibenz (a,h)anthracene
13.	3-amino-9-ethylcarbazole	49.	
14.	l-amino-2-methylanthraquin		di-n-butyl phthalate
15.	aminotriazole (amitrole)	51.	3,3-dichlorobenzidine
16.	aniline	52.	3,3-dichlorobenzidine salts
17.	aniline hydrochloride	53.	1,2-dichloroethane
	o-anisidine		dichloroethylenes
19.	o-anisidine hydrochloride		a. 1,1-dichloroethylene
	benz(a)anthracene	54.	<ul><li>b. 1,2-trans-dichloroethylene</li></ul>
	benzene	55.	dichloropropane and dichloropropene
22.	benzidine	55.	a. 1,3-dichloropropylene;
	benzidine salts		(1,3-dichloropropene)
	benzo(a)pyrene	55	b. 1,2-dichloropropane
	brucine		1,2:3,4-diepoxybutane
	carbon tetrachloride		diethyl sulfate
	chlorinated benzenes	58 58	4-dimethylaminoazobenzene
	a. chlorobenzene	59	dimethylhydrazines
	b. 1,2,4-trichlorobenzene	60	2,4-dimethylphenol
27.	c. 1.2-dichlorobenzene	61.	4,6-dinitro-o-cresol
27.	<ul><li>c. 1,2-dichlorobenzene</li><li>d. 1,3-dichlorobenzene</li></ul>		2,4-dinitrophenol
27.	e. 1,4-dichlorobenzene	63.	2,4-dinitrotoluene
28.	chlorinated dibenzofurans	64.	dinitrotoluene
	chlorinated dioxins		a. 2,6-dinitrotoluene
	chlorinated ethanes	65.	
30.			1,4-dioxane
30.	b. 1,1-dichloroethane	67.	
30.	c. chloroethane	68.	ethylbenzene
30.	d. 1,1,2,2-tetrachloroethane	69.	ethylene dibromide
31.	chlorinated naphthalene	70.	ethyleneimine
31.	a. 2-chloronaphthalene	71.	ethylene oxide
32.	chlorinated phenols	72.	
32.	a. 2-chlorophenol	73.	
32.	b. parachlorometa-cresol	74.	
32.	c. 2,4-dichlorophenol		fluoranthene
33.	1-chloro-2,3-epoxypropane	75. 76.	2-(2-formylhydrazino)-4-(5-nitro-2-fury)-
34.	chloroalkyl ethers	70.	thiazole
35.	bis(2-chloroethyl ether		CHIGAOTE
36	chloroform	ORCAL	NICS CONTINUED ON DAGE 2

36. chloroform

ORGANICS CONTINUED ON PAGE 2

77.		116.	N-nitrosomethylvinylamine
77.		117.	
77.	b. 4-bromophenyl phenyl ether	118.	
77.		1.0.	ammonium salt
77.	d. bis(2-chloroethoxy)methane	170	
78.			N-nitrososarcosine
78.	a. methylene chloride:	120.	pentachloronitrobenzene
70.	(dichloromethane)	121.	· ·
70		122.	peroxyacetic acid
78.	b. methyl chloride; (chloromethane)	123.	phenol
78.		124.	Phthalate esters
78.	d. bromoform; (tribromomethane)	124.	<ul> <li>a. butyl benzyl phthalate</li> </ul>
78.	<ul><li>e. dichlorobromomethane</li></ul>	124.	<ul><li>b. diethyl phthalate</li></ul>
78.		124.	
78.		125.	
78.	h. chlorodibromomethane	126.	
79.	hexachlorobenzene (HCB)	_127.	
80.	hexachlorobutadiene	128.	
81.	hexachlorocyclohexane		polynuclear aromatic hydrocarbons
82.	hexachlorocyclopentadiene	128.	a. 3,4-benzofluoranthene
83.	hexachloroethane	128	<ul><li>b. benxo(k) fluoranthane;</li></ul>
84.	hydrazobenzene		(11,12-benzofluoranthene)
85.		128.	c. chrysene
	hydroquinone	128.	d. acenaphthylene
86.	N-(2-hydroxyethyl)ethyleneimine	128.	e. anthracene
87.	isophorone	128.	<pre>f. benzo(ghi)perylene;</pre>
88.	lactonitrite	, 20 (	(1,12-benzoperylene)
89.	malachite green	128.	g. fluorene
90.	methylenebis(2-chloroaniline)	128.	h. phenathrene
91.	4,4-methylenebis(2-methylaniline)	128.	
92.	4,4-methylenebis(N,N-dimethylaniline)	128.	i. indeno(1,2,3-cd)pyrene;
93.	1,2(methylenedioxy)-4-propenyl		(2,3-0-phenylenepyrene)
	benzene	128.	j. pyrene
94.	methyl hydrazine	128.	k. naphthalene
95.	l-methylnaphthalene	129.	1,3-propane sultone
96.	2-methyl-l-nitroanthraquinone	130.	
97.	•	131.	5-propyl-1,3-benzodioxole
	mustard gas	132.	propyleneimine
98.	1,5-naphthalenediamine	133.	semicarbazide
99.	1-naphthylamine	134.	styrene
100.	2-naphthylamine	135.	tetrachloroethylene(perchloroethylene)
101.	5-nitroacenaphthene	136.	thioacetamide
102.	5-nitro-o-anisidine	137.	
103.	nitrobenzene	138.	•
104.		139.	
105.	nitrogen mustard	140.	o-toluidine
106.	2-nitrophenol		
107.	4-nitrophenol	141.	o-toluidine hydrochloride
108.	Nitrosamines	142.	triaryl phosphate esters
108.	a. N-nitrosodiphenylamine	143.	1,1,2-trichloroethane
108.	b. N-nitrosodi-n-propylamine	144.	trichloroethylene
109.	N-nitroso-n-butyl-N-(4-hydroxybutyl)	145.	trichlorophenols
103.	amine	146.	2,4,5-trimethylaniline
110		147.	trimethylphosphate
110.	N-nitrosodiethylamine	148.	vinylchloride
111.	N-nitrosodimethylamine	V149.	xylene
112.			•
113.		ORGAN	ICS CONTINUED ON PAGE 3
114.	N-nitroso-N-methylurea	ortar in	200 CONTRIBUTE ON FRANCE O
115.	N-nitroso-N-methylurethane		•

A. I	NORGANICS	PEST	ICIDES (Continued)
150.			
	antimony	194.	
	arsenic		clonitralid
152.	beryllium		coumaphos
	cadmium		crotoxyphos
	chromium		cycloheximide
	cobalt	199.	
	copper	200.	
	cyanides	201.	
	hypochlorite	202.	
	lead	203.	dibromochloropropane (DBCP)
	lithium	204.	
	mercury		dichlorvos
	nickel	206.	dichrotophos ·
	selenium		dieldrin
	silver		dimethoate
	thallium		dinocap
166.	zinc	210.	
n 7	NODCANICC		dioxathion
<u>B. I</u>	NORGANICS		disulfoton
167			endosulfan
167.	acids		endrin
	chloramines	215.	
	chlorine		ethion
	hydrazine		fensulfothion
171.	hydrogen sulfide		fenthion
	NODCANTOC		fluchloralin
<u>C. I</u>	NORGANICS	220.	heptachlor
3.70	/ 6:1	221.	heptachlor epoxide
172.	asbestos (fibrous)	222.	Isomers of hexachlorocyclohexane
	0.055	222.	The state of the s
PESTI	CIDES	222.	b. b-BHC-Beta
	• • •		c. g-BHC-Delta
173.	aldicarb		leptophos
	aldrin		malathion
175.	4-aminopyridine	225.	metabolites of DDT
176.	anilazine	225.	a. 4,4'-DDE;(p,p'-DDE)
177.	antimycin A	225.	b. 4,4'-DDD;(p,p'-TDE)
178.	azinphos-ethyl	226.	metabolites of endosulfan
179.	azinphos-methyl	226.	a. endosulfan sulfate
180.	barban	227.	metabolities of endrin
181.	bendiocarb	227.	a. endrin aldehyde
182.	benomyl	228.	metabolites of heptachlor
183.	bromaxynil	228.	a. heptachlor epoxide
184.	2(p-tert-butylphenoxy)-isoprophyl-	229.	methomyl
105	2-chloroethyl sulfite	230.	methoxychlor
185.	captafol	231.	methyl mercaptan
186.	captan	232.	methyl parathion
187.	carbaryl	233.	mevinphos
188.	carbofuran	234.	mexacarbate
189.	carbophenothion	235.	mirex
190.	chlordane	236.	monocrotophos
191.	chlordecone	237.	naled
192.	chlorfenvinphos	238.	nicotine
193.	chlorobenzilate	239.	nitrofen
		240.	oxydemeton-methyl

### PESTICIDES (Continued)

- 241. paraquat
- 242. parathion
- 243. phorate
- 244. phosazetim
- 245. phosmet
- 246. phosphamidon
- 247. rotenone
- 248. silvex, propylene glycolbutyl ether ester
- 249. sodium fluoroacetate
- 250. strychnine
- 251. sulfallate
- 252. sulfotepp
- 253. TDE
- 254. TEPP 255. terbufos
- 256. tetrachlorvinphos
- 257. thiram
- 258. toxaphene
- 259. trichlorfon
- trichlorophenoxyacetic acid (2,4,5-T)
- 261. trifluralin
- 262. ziram

### ATTACHMENT A

### STANDARD INDUSTRIAL CLASSIFICATION CODES

Note: This is an edited list.

Code Title	Code Title
AGRICULTURE	MANUFACTURING (Continued)
0100 AGRICULTURAL PRODUCTION-CROPS 0200 AGRICULTURAL PRODUCTION- LIVESTOCK 0211 Beef Cattle Feedlots 0241 Dairy Farms 0700 AGRICULTURAL SERVICES MINING	2080 Beverages 2082 Malt Beverages 2084 Wines, brandy, and brandy spirits 2085 Distilled liquor, except brandy 2086 Bottled and canned soft drinks 2087 Flavoring extracts and sirups, nec. 2090 Misc. Foods and Kindred Products 2091 Canned and cured seafoods 2092 Fresh or frozen packaged fish
	, •
1000 METAL MINING 1011 Iron Ores 1021 Copper Ores 1081 Metal Mining Services	2200 TEXTILE MILL PRODUCTS  2300 APPAREL AND OTHER TEXTILE PRODUCTS
1300 OIL AND GAS EXTRACTION 1380 Oil and Gas Field Services	2400 LUMBER & WOOD PRODUCTS 2420 Sawmills and Planing Mills 2430 Millwork, Plywood & Structure Members
1400 NONMETALIC MINERALS 1422 Crushed and Broken Limestone 1440 Sand and Gravel 1450 Clay and Related Minerals 1470 Chemical and Fertilizer Minerals 1492 Gypsum	2440 Wood Containers 2448 Wood pallets and skids 2450 Wood Buildings and Mobile Homes 2491 Wood preserving 2492 Particleboard
CONSTRUCTION	2500 FURNITURE AND FIXTURES
1500 GENERAL BUILDING CONTRACTORS 1600 HEAVY CONSTRUCTION CONTRACTORS	2600 PAPER AND ALLIED PRODUCTS 2611 Pulp mills 2621 Paper mills except building paper 2631 Paperboard mills 2640 Misc. Converted Paper Products
MANUFACTURING	2650 Paperboard Containers and Boxes 2661 Building paper and board mills
2000 FOOD AND KINDRED PRODUCTS 2010 Meat Products 2011 Meat Packing Plants & Slaughter Houses 2020 Dairy Products 2030 Preserved Fruits & Vegetables 2033 Canned Fruits & Vegetables 2035 Pickles, Sauces & Salad Dressings	2700 PRINTING AND PUBLISHING 2710 Newspapers 2750 Commercial Printing 2790 Printing Trade Services 2800 CHEMICALS AND ALLIED PRODUCTS 2810 Industrial Inorganic Chemicals
2037 Frozen Fruits & Vegetables 2040 Grain Mill Products 2043 Cereal Breakfast Foods 2047 Dog, Cat & Other Pet Food 2050 Bakery Products 2060 Sugar and Confectionary Products 2063 Beet Sugar 2070 Fats & Oils 2076 Vegetable Oil Mills	2820 Plastics Materials & Synthetics 2830 Drugs 2840 Soap, Cleaners, and Toilet Goods 2850 Paints and Allied Products 2860 Industrial Organic Chemicals 2870 Agricultural Chemicals 2890 Miscellaneous Chemical Products 2891 Adhesives and sealants
2077 Animal & Marine Fats & Oils	

Code	Title	Code		Title
MANU	FACTURING (Continued)	MANU	FACTURING	(Continued)
	Explosives Printing Inks	3398	Metal hea	t treating
	Salt (by evaporation)			D METAL PRODUCTS s & shipping containers
2911	PETROLEUM AND COAL PRODUCTS Petroleum refining Paving and roofing materials	3420 3430 3440	Cutlery,h Plumbing Fabricate	and tools, & hardware & heating, except electric d structural metal products
3011	RUBBER AND MISC. PLASTIC PRODUCTS Tires and inner tubes	3443		rs, sash & trim d plate work (boiler shops) al work
	Fabricated rubber products Miscellaneous plastic products	3460	Metal for	hine products, bolts, etc. gings and stampings steel forgings
	LEATHER AND LEATHER PRODUCTS Leather tanning and finishing	3463 3465	Nonferrou	s forgings e stampings
3220 3241 3250	STONE, CLAY, AND GLASS PRODUCTS Glass and Glassware, Pressed or Blown Cement Structural Clay Products Pottery and Related Products	3471 3479 3480	Plating a Metal coa Ordnance	nd polishing ting and allied services and Accessories ricated Metal Products
3270 3271 3273	Concrete Gypsum and Plaster Products Concrete block and brick Ready-mixed concrete Lime	3510 3520	Engines a Farm and	, EXCEPT ELECTRICAL nd turbines Garden Machinery ion & Related Machinery
3275 3290 3291	Gypsum products Misc. Nonmetallic Mineral Products Abrasive products Asbestos products	3540 3550 3560	Meatworki Special I General I	ng machinery ndustry Machinery ndustrial Machinery Computing Machines
3295	Minerals, ground or treated Nonclay refractories	3580	Refrigera	tion & Service Machinery hinery, except electrical
3310 3312 3313 3315 3316 3317 3320 3321	PRIMARY METAL INDUSTRIES Blast Furnaces & Basic Steel Products Blast Furnaces & Steel Mills Electrometallurgical products Steel wire and related products Cold finishing of steel shapes Steel pipe and tubes Iron and Steel Foundries Gray iron foundries Malleable iron foundries	3610 3620 3630 3640 3650 3660 3670	Electric Electrica Household Electric Radio & T Communica Electronic	AND ELECTRONIC EQUIPMENT Distributing Equipment 1 Industrial Apparatus appliances lighting and wiring equipment V Receiving Equipment tion Equipment c Components & Accessories ctrical Equipment & Supplies
3330 3331 3332 3333 3334 3340 3360 3361 3362	Primary Nonferrous Metals Primary copper Primary lead Primary zinc Primary aluminum Secondary Nonferrous Metals Die Casting Aluminum foundries Brass, bronze & copper foundries Misc. Primary Metal Products	3710 3711 3714 3715 3720 3730 3740 3750	Motor Veck Motor Veck Truck tra- Aircraft a Ship & Boa Railroad I Motorcycle	and parts ard building and repairing

MANUFACTURING (Continued)	SERVICES (Continued)
3790 Miscellaneous Transportation Equipment 3792 Travel trailers & campers 3795 Tanks and tank components	7030 Camps and Trailering Parks 7032 Sporting and recreational camps 7210 Laundry, Cleaning & Garment Services 7215 Coin-operated laundries
3800 INSTRUMENTS & RELATED PRODUCTS 3810 Engineering & Scientific Instruments 3820 Measuring & Controlling Devices 3830 Optical Instruments and Lenses 3840 Medical Instruments and Supplies 3860 Photographic Equipment & Supplies	7391 Laboratories-testing and research 7399 Water softener service
3900 MISCELLANEOUS MANUFACTURING INDUSTRIES 3910 Jewelry, Silverware & Plated Ware 3930 Musical Instruments	7500 AUTO REPAIR SERVICES & GARAGES 7530 Automotive Repair Shops 7542 Car Washes
3940 Toys & Sporting Goods 3950 Pens, Pencils, Office & Art Supplies 3990 Miscellaneous Manufactures	7900 AMUSEMENT & RECREATION SERVICES 7933 Bowling alleys 7940 Commercial sports 7941 Sports clubs and promoters
TRANSPORTATION	7948 Racing including track operation 7992 Public golf courses
4010 RAILROADS	7996 Amusement parks 7997 Membership sports & recreation clubs
4200 TRUCKING AND WAREHOUSING 4210 Trucking Local & Long Distance 4214 Hauling Liquid Wastes 4221 Farm Product Warehousing & Storage 4222 Refrigerated Warehousing 4230 Trucking Terminal Facilities	8000 HEALTH SERVICES 8050 Nursing and personal care facilities 8060 Hospitals 8070 Medical and Dental Laboratories 8080 Outpatient Care Facilities
4400 WATER TRANSPORTATION 4430 Great Lakes Transportation 4440 Transportation on Rivers and Canals 4452 Ferries 4454 Towing and tugboat services 4460 Water Transportation Services 4463 Marine Cargo Handling	
SERVICES	
4900 ELECTRIC, GAS & SANITARY SERVICES 4911 Electric Services 4925 Gas production and/or distribution 4953 Refuse systems	

5810 EATING & DRINKING PLACES

7000 HOTELS & OTHER LODGING PLACES 7011 Hotels, motels, & tourist courts

6512 OFFICE BUILDINGS

### KALAMAZOO SURVEY FORM

### SPILL PREVENTION

	<u>Material</u>	Volume	Location
1)	Aluminum Sulfate	12,000 gal.	Building #4 - 3rd Flr.
2)	Rosin Size	10,000 gal.	Building #4 - 1st Flr.
3)	Kymene	8,000 gal.	Beater Room
4)	Fuel Oil	50,000 gal.	Outside West Wall of Building #4 - Boiler Room
5)	Caustic	7,000 gal.	Boiler Room
6)	Kylene	4,000 gal.	Outside North Wall of Receiving Warehouse

	INSPECT	ION _	MEE	ring	PH	ONE COI	IVERSA'	rion	OBS	ERVATI	ON
Nan	e of Fac Ac Co	cility_ idress_ ontact_	Nic Geo Greg	Kal Pac ? Taxl	Pap site	e/5 5a/vage	. Co.	employ	Time	4-22- 	
Pur	pose:	Notic	ed of	en deo	1) (1)	Vickal	Paper	- du	čia.gi	ns pectio	24
	of	beo )	Pac	clarit	Gė1					<del></del>	<del></del>
Ite	ms Disc	ussed:_									
1.	Salvag	e co	s #i	Tech 4	veldin	g & Fab.	ricatin	g <u>Co</u> .	of C	OM SZO	de n
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	Fabr	cuting									<del></del>
<u> 2.</u>	To sale	rase bu	ilding	11 D u	uls o	1/7			<del></del>	······································	
3,	noticed	17 P	cB	labeled	Tra	nsform	ers =	bres	5075	~40-50	Tota
	Througho							•			
	1 tran	•									
	ervation			_			•		,	•	
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INSPECTION SETING	PHONE CONVERSAT V	OBSERVATION
Name of Facility M)N/E	2-PLAINWELL	Date 4-23-9/
Address	7 0	Time
Contact VV a	MITTOMENS	- Tolon
Purpose: Nichal Pap	H S16	
		· <del></del>
Items Discussed: MCC	medilalan - 1	San Bot Clo
icems biscussed.	yes of a vas.	and the same
and I'm blue	alexa chen un	ene Cat
H.		
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Observations.		
Observations:	<del></del>	
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Further Action Required:		
•		
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e: General Correspondence		
		/ /
Inspection		
Lab Data	1////	11 / A
Self-Monitoring/Compliance	a: 1/1/1///	11/1/
Other	Signature	www v
·	W V - 1	
New Industrial User		
Needs Attention		
<del></del> -		
submitted by		
Submitted by		

INSPECTION	MEETING	PHONE CO	NVERSATION	OBSERVATION
Name of Facility Address Contact	Nickal Mark T	Site aylor		Date <u>4-24-9/</u> Time <u>10:30 em</u>
Purpose:	CB trenst	former, on	-site	
Items Discussed:				
1. Mark is awa	·	-		
PCB Transfe	rmeri on-sic	<u>Te</u>		
	<del></del>		<u> </u>	
Observations:				
1. appears that				
note: 24 hm	-		•	
TO site in				
pr # 1 above , n				
doors which	were open	in am	where cla	sed is bldg to
Further Action Re	quired:			
1. return to Kin	tal t get	more com	lete informa	tion about
transformers	14 locati	ouls) + numb	a, maritac	turepts), etc.
2 determine if	,		•	•
Tracking Book: (p	•			
Inspection Meet	ing Compli	ance Sched	ule Violat	ion Sum None
	_			
		Signature	Refrest C	2 OVan

INSPECTION	MEETING	PHONE CONV	ersation 👱	OBSERVATION
Name of Facili	ty Nickal	Paper S.TC		Date <u>5-6-9/</u>
Conta	ct <u>Mark</u>	Taylor		Time 1:00pm
Purpose: <u>local</u>	ce é inventor	y PCB capie	rtors & tran	stormers
Items Discusse	d: 1. Mark e.	corted me to	11 Known cap	icators & Erausta
see in ventury	list on bac	k of This p	age	
		nere found		
	V			
		ted, 3 small		(er) 10 Cales,
3 large 7	ransformers	located.		
			<del></del>	
Observations:				
		conversation		Marlie Tax of
•		"Transformers"		
Observation r	eport are a	ctually "capic	ators"	
Further Action	Required:			
·			<del></del>	
Tracking Book:	(please circ)	Le)		
Inspection Me	eeting Comp	iance Schedule	e Violation	n Sum None
		Signature #	Juin 0 110	Tan

•

INSPECTION	MEETING _	PHONE CONVER	SATION OBSER	NOITAV.
Name of Facility Address Contact	vickal Pa	per	Date Time ;	<u>5-6-9</u> 0:30-11:45
Purpose: co	nfirm location	ion of PCB Co	apicaters.	
Items Discussed:				
1. 42 capicators	listed 5-6	-91 were 1	relocated	
				***************************************
Observations: 1, 3		•		
Further Action Re	equired:			
Tracking Book: (p	lease circle	)		
Inspection Meet	ing Compli	ance Schedule	Violation Sum	None
		Signature_Rol	Int C OTay	

"108" label Ξ rich Ξ a capicators: Y 45657 26 954 1 has 1, chlorine room

= Ξ 2. Maintenance shop has I capicator; no ID tag,

=

3. beater room @ electrical panel has 18 capicators:

"pcB" labe/ = = 2 W. 12h = 1 459541 7476 74 745665 879 Sh X 0099h K 745653 2795hX 745671 ソッヤアラロ 7 43704

were not readable from these paper ID tass where they were available. Fach of the beapicators had a do not have paper ID tags. The serial numbers 6 capitators, by Westinghouse, which hove "pcB" lesel.

:

well: SNE 198361, with "PCB" label mark Taylor located 2 additional capicators in the beater SNE 194372, 7500 847 vo LOO M note.

Scapicatory total

Hydropulper room, 4 capicators with "PCB" labels were too high Broad

5... refining room has 2 capicators: ryzzzz , with "pc8" label one could not read #15 , !!

6. machine 100m has 6 capicators.

2 along SOUTH Wall : Y49659 , with 'PCB" label one could not read #15,

with paper ID tags which could not be read 4 Westinghouse capicators along northwall eath capicator had a "pcB" label. F. shipping room has 2 capicators both too high to read serial #s, both capitators had a "pcB" label. 8. Steam foom has 1- capicator, #'s were painted over and ... unreadable - had "pcB" label.

9. Boiler 100 M has 3 capicators Westinghouse with paper ID tags Too high to read sorial #'s, each had a "PCB" label.

- paper ID rass could not read serial #'s, each had a "peb" labd, 10. electrical shop had 5 capicators; 4 were westing house with

mite: an additional capicator was located: D470356 with PCB" lessol

INSPECTIONMEETING _	PHONE CONVERSATIONOBSERVATION
Name of Facility Nickal si Address	Time_11:00a,
,	ansformers / capacitors on-size
Items Discussed:	·
1. Mark Taylor is no longer a	
remaining metal on-site	sego Metal Buyers, is salvaging
· · · · · · · · · · · · · · · · · · ·	Iked Through D SITE TO confirm
the location & condition of	f "PCB" capacitors noted on 4-2
Observations:	
<u></u>	
	d in same position with no visit
Signs of damage or release	
-	rac found in large STORE room on
The second floor - Do	high Do read serial numbers.
Further Action Required:	
•	•
	The second secon
File: General Correspondence	·
Lab Data	
Self-Monitoring/Compliance	
Other	Signature Robert C OTay
	Bigliacare 14000 Cooling
New Industrial User	signature_v-v-v-w covery

	MEETING				
Name of Facili	ty wickal	Paper			Date 4-2/
Addre	ss·				Time 1:45
Conta	ct		•		
			•		
Purpose:	determine	status	of PUB	Cup	pacitors
Items Discusse	d:				
		<del> </del>		<del></del>	
			,		
					•
			•		
					<del></del>
Observations:	-	·			. • •
ino activity	at this acitors were	time e locate	1 è uppe.	red	in Tacz
ino activity	at this acitors were	time e locate	1 è uppe.	red	in Tacz
ino activity	at this acitors were	time e locate	1 è uppe.	red	in Tacz
ino activity  Some cap  Jerse Tr	at this acitous were	time clocate appea	N'è upper	red	in Tacz no leak
Eno activity  Some (up  3 large Tr	at This acitous were ansformers  Required: 1.	time  Locate  appea  .  return	1 & upper	red re-	in tact  no leads
Eno activity  Some (up  3 large Tr	at this acitous were ansformers	time  Locate  appea  .  return	1 is upper	red re-	in tact  no leads
Further Action	at This acitous were ansformers  Required: 1.	time  locate  appea  return  serial =	1 is upper	red re-	in tact  no leads
Further Action	at This acitors were ansformers  Required: 1.	time  locate  appea  return  serial =	1 is upper	red re-	in tact  no leads
Further Action  They can  File: General C	at This  acitoss were  ansformers  Required:  be relocate  onespondence	time  locate  appea  return  serial =	1 & upper red . Sector at fotor	red re-	in tact  no leads
Further Action  They can  Inspection  Lab Data	at This  acitors were  ansformers  Required:  pacitori  se relocati  orrespondence	time  locate  appea  return  serial =	1 & upper red . Sector at fotor	red re-	in tact  no leads
Further Action  They can  File: General C  Inspection  Lab Data  Self-Moni	at This  acitoss were  ansformers  Required:  be relocate  onespondence	time  locate  appea  return  serial =	1 & upper red . Sector at fotor	red re -	in Tacz  no leak  ute w



### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

October 8, 1996

Mr. Ralph O. Balkema Orchard Hill Landfill 3378 Hennessey Road Watervliet MI 49098

Dear Mr. Balkema:

Enclosed please find 1996 Industrial User Self-monitoring report forms which have been prepared for your convenience. Please note that the reporting form has been adjusted to reflect the monitoring requirements specified in the Individual Control Document issued to your facility. The information requested is the minimum required by current Federal Pretreatment Regulations (40 CFR 403.12).

It is important that <u>all</u> of the requested information be completed on the enclosed form, and that the form be signed by the appropriate "Responsible Party" designated below the signature line. (Parameters which are not required are shown as "N/R" on the reporting form. A blank line is provided for the results and units of those parameters which require monitoring.) All sampling and flow data should be submitted to our office within 10 days after the end of the reporting period specified on the enclosed forms

Please remember that if the sampling indicates a violation, <u>you must notify our office within 24 hours.</u>

If you have any questions regarding your reporting requirements, please contact me at 337-8705.

Sincerely,

Robert O'Day Industrial Inspections Supervisor

bod:dw\tech-svc\96-smltr



# KALAMAZOO WATER RECLAMATION PLANT

### INDUSTRIAL USER SELF-MONITORING REPORT

Facility:	Orchard	Hill	Landfill
	0070 II		

3378 Hennesy Road Watervliet MI 49098 **Due:** January 10, 1997

Reporting Period: July 1, 1996 - December 31, 1996

Sample Code: OHL

<u>Location:</u> Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.

**Monitoring Requirements:** 

Pollutants	Daily Max.	Monthly Avg. Max.	<u>Unit</u>	Results	Sample Type
BETX	15		mg/l		GRAB
CADMIUM	40		ug/l		GRAB
COPPER	2230		ug/l		GRAB
CYANIDE	250		ug/l		GRAB
LEAD	110		ug/l		GRAB
MDNR SCAN 1				Attach Data	GRAB
MERCURY	0		ug/l		GRAB
NICKEL	1590		ug/l		GRAB
PCBs	0		ug/l	N/R	GRAB
PCBs (Annually)					GRAB
TCLP (Annually)					GRAB
TOTAL CHROMIUM	4670		ug/l		GRAB
TOTAL PETROLEUM HYDROCARBON	100		mg/l		GRAB
ZINC	5300		ug/l		GRAB
pH	6.2 - 9.8		S.U.		GRAB

	I/D indicates Not Beguired			_
IN.	I/R indicates Not Required	PLEASE ATTA	CH COPIES OF LABORATORY RESULTS	5
Flow Inform	nation: Average	e Daily (GPD)	Maximum Daily (GPD)	
Date and Tir	ne of Sampling:			
		Grab:		
	re than one batch is discharged prior to analysis.	on the day of sampli	ng, please sample each batch and comp	osite
system designers person or pers is, to the best of	ed to assure that qualified personnel points who manage the system, or those	properly gather and evalu persons directly responsi rate, and complete. I am a	ared under my direction or supervision in accord ate the information submitted. Based on my ind ble for gathering the information, the information ware that there are significant penalties for subm tions.	quiry of the submitte
TCLP and PCB	analysis must be conducted on an ann	ual basis.		
Contact:				
	Raiph O. Baikema		Date	
Title:	Construction Supervisor	•		



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

September 18, 1996

Mr. Ralph Balkema Orchard Hill Landfill 3378 Hennesy Rd.. Watervliet, Michigan 49098

Dear Mr. Balkema

Please be aware that a Freedom Of Information Act request has be filed by Paw Paw Lake Wastewater Treatment Plant for Orchard Hill Landfill's analytical sample results. Provided to Paw Paw Lake was the complete analytical history of the hauled leachate from Orchard Hill Landfill discharged at the Kalamazoo Water Reclamation Plant. All sampled parameters were included in the provided information. A copy of the information has been enclosed for reference. If you have any questions or concerns, please feel free to contact me at (616) 337-8706.

Steven M. Rochow

Steven M. Rochow

**Industrial Pretreatment Inspector** 

c: Robert O'Day, Industrial Inspections Supervisor Bruce Merchant, Wastewater Systems Manager

Parameter	Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
1,1,1,2-TETRACHLOROETHENE	0.00 ug/l	*	22.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1,1,2-TETRACHLOROETHENE	0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						i
1,1,1-TRICHLOROETHANE	0.00 ug/l	*	10.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1,1-TRICHLOROETHANE	23.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,1,1-TRICHLOROETHANE	0.00 ug/l	*	2.00 ug/ļ	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	7.67						
1,1,2,2-TETRACHLOROETHANE	2.20 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
1,1,2,2-TETRACHLOROETHANE	1.40 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
1,1,2,2-TETRACHLOROETHANE	0.00 ug/l	*	19.50 ug/i	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1,2,2-TETRACHLOROETHANE	0.00	*	1.00 ug/i	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,1,2,2-TETRACHLOROETHANE	0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
1,1,2,2-TETRACHLOROETHANE	0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
AVG:	0.60						
1,1,2-TRICHLOROETHANE	3.00 ug/l		· · · · · · · · · · · · · · · · · · ·	7/3/1990	SM GRAB		
1,1,2-TRICHLOROETHANE	1.10 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
1,1,2-TRICHLOROETHANE	0.00 ug/l	*	22.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1,2-TRICHLOROETHANE	0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,1,2-TRICHLOROETHANE	0.00 ug/i	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
1,1,2-TRICHLOROETHANE	0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
AVG:	0.68						
1,1-DICHLOROETHANE	14.00 ug/i			3/5/1990	GRAB	2:25:00 PM	
1,1-DICHLOROETHANE	19.00 ug/l			3/7/1990	SM GRAB		
1,1-DICHLOROETHANE	16.00 ug/l			4/24/1990	SM GRAB		
1,1-DICHLOROETHANE	20.00 ug/l			5/1/1990	SM GRAB		
1,1-DICHLOROETHANE	5.60 ug/l			5/23/1990	SM GRAB		
1,1-DICHLOROETHANE	3.90 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
1,1-DICHLOROETHANE	4.50 ug/i			10/2/1990	SM GRAB	10:45:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

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Parameter		Result		Detection Limit	Date	Sample Type	Time	Reason for Analysis
1,1-DICHLOROETHANE		1.90 ug/i			11/9/1990	SM GRAB	11:30:00 AM	
1,1-DICHLOROETHANE		7.70 ug/i			1/8/1991	SM GRAB	1:00:00 PM	
1,1-DICHLOROETHANE		4.60 ug/l			4/5/1991	SM GRAB	8:00:00 AM	;
1,1-DICHLOROETHANE		6.90 ug/l			1/6/1992	SM GRAB	10:00:00 AM	,
1,1-DICHLOROETHANE		3.30 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
1,1-DICHLOROETHANE		3.70 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
1,1-DICHLOROETHANE		0.00 ug/l	*	13.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1-DICHLOROETHANE		30.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,1-DICHLOROETHANE		15.00 ug/l		3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
1,1-DICHLOROETHANE		14.00 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	10.01					•	
1,1-DICHLOROETHENE		11.00 ug/l			7/3/1990	SM GRAB		
1,1-DICHLOROETHENE		0.00 ug/l	*	12.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1-DICHLOROETHENE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,1-DICHLOROETHENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
1,1-DICHLOROETHENE		0.00 ug/l	*	1,00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	2.20						
1,1-DICHLOROPROPENE		0.00 ug/l	*	11.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,1-DICHLOROPROPENE		0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,2,3-TRICHLORO BENZENE		0.00 ug/i	*	40.00 ug/i	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2,3-TRICHLORO BENZENE		0.00 ug/l	*	8.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,2,3-TRICHLOROPROPANE		0.00 ug/l	*	55.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2,3-TRICHLOROPROPANE		0.00 ug/l	*	11.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,2,4-TRICHLOROBENZENE		0.00 ug/l	*	33.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u> 1,2,4-TRICHLOROBENZENE	Result 0.00 ug/l	 *	Detection Limit 7.00 ug/l	<u>Date</u> 2/22/1996	Sample Type GRAB	<u>Time</u> 10:05:00 AM	Reason for Analysis
AVG:	0.00		7.00 ug/i	2/22/1990	GIAD	10.03.00 AM	Compliance Monitoring
1,2,4-TRIMETHYL BENZENE	0.00 ug/l	*	22.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2,4-TRIMETHYL BENZENE	0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2-DIBROMO-3-CHLORO PROPANE	0.00 ug/l	*	25.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2-DIBROMO-3-CHLORO PROPANE	0.00 ug/l	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2-DIBROMOETHANE	0.00 ug/l	*	20.00 ug/i	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2-DIBROMOETHANE	0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2-DICHLOROBENZENE	0.00 ug/l	*	28.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2-DICHLOROBENZENE	0.00 ug/l	*	6.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2-DICHLOROETHANE	140.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
1,2-DICHLOROETHANE	99.00 ug/l			3/7/1990	SM GRAB		
1,2-DICHLOROETHANE	1.20 ug/l			4/6/1990	SM GRAB		
1,2-DICHLOROETHANE	110.00 ug/l			4/24/1990	SM GRAB		
1,2-DICHLOROETHANE	150.00 ug/l			5/1/1990	SM GRAB		
1,2-DICHLOROETHANE	56.00 ug/l			5/23/1990	SM GRAB		
1,2-DICHLOROETHANE	51.00 ug/i			8/24/1990	SM GRAB	10:00:00 AM	
1,2-DICHLOROETHANE	52.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
1,2-DICHLOROETHANE	67.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
1,2-DICHLOROETHANE	77.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
1,2-DICHLOROETHANE	98.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
1,2-DICHLOROETHANE	32.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
1,2-DICHLOROETHANE	30.00 ug/l			3/12/1992	GRAB	11:30:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

Parameter		Result		Detection Limit	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
1,2-DICHLOROETHANE		28.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
1,2-DICHLOROETHANE		19.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
1,2-DICHLOROETHANE		50.00 ug/l			6/21/1994	SM GRAB		ţ
1,2-DICHLOROETHANE		0.00 ug/l	*	9.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2-DICHLOROETHANE		0.00	•	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,2-DICHLOROETHANE		0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
1,2-DICHLOROETHANE		0.00 ug/l	•	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	53.01						
1,2-DICHLOROPROPANE		2.60 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
1,2-DICHLOROPROPANE		0.00 ug/l	•	13.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,2-DICHLOROPROPANE		0.00	*	1.00 ug/i	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
1,2-DICHLOROPROPANE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
1,2-DICHLOROPROPANE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.52						
1,3,5-TRIMETHYL BENZENE		0.00 ug/l	*	15.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,3,5-TRIMETHYL BENZENE		0.00 ug/l	•	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,3-DICHLOROBENZENE		0.00 ug/l	*	29.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,3-DICHLOROBENZENE		0.00 ug/l	*	6.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,3-DICHLOROPROPANE		0.00 ug/l	*	18.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,3-DICHLOROPROPANE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,4-DICHLOROBENZENE		5.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
1,4-DICHLOROBENZENE		15.00 ug/l			3/12/1992	GRAB	11:30:00 AM	
4 4 DICHI ODODENZENE		0.00 ug/l	*	35.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
1,4-DICHLOROBENZENE		0.00 a.g.,		•				

<sup>\*</sup> indicates monitoring result below detection limit

Parameter	AVG:	Result 5.00		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
1-1-1-TRICHLOROETHANE	<u></u>	3.20 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	3.20		-				
2,2-DICHLOROPROPANE		0.00 ug/l	*	12.50 ug/l	10/10/1995	GRAB ·	1:20:00 AM	Compliance Monitoring
2,2-DICHLOROPROPANE		0.00 ug/l	•	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
2,4-D	<del>/=</del> ,	0.00	*	20.00 ug/l	5/13/1992	SM GRAB	11:00:00 AM	
	AVG:	0.00						
2-CHLORO TOLUENE		0.00 ug/l	*	22.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
2-CHLORO TOLUENE		0.00 ug/l	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
2-NITROPROPANE		0.00 ug/l	*	26.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
2-NITROPROPANE		0.00 ug/l	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
4-CHLORO TOLUENE	· · · · · ·	0.00 ug/l	*	22.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
4-CHLORO TOLUENE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
4-METHYL 2-PENTANONE		0.00 ug/l	*	21.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
4-METHYL 2-PENTANONE		222.00 ug/l		4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	111.00						
ACETONE		860.00 ug/l		250.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
ACETONE		4,930.00 ug/l		10.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	2,895.00						
ACRYLONITRILE	<u></u>	0.00 ug/l	*	15.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
ACRYLONITRILE		0.00 ug/i	•	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
ALLYL CHLORIDE	<del></del>	0.00 ug/l	*	11.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

<u>'arameter</u> ALLYL CHLORIDE		Result 0.00 ug/l	 *	Detection Limit 2.00 ug/l	<u>Date</u> 2/22/1996	Sample Type GRAB	<u>Time</u> 10:05:00 AM	Reason for Analysis
ALL TE OFFICERE	AVG:	0.00		2.55 dgii	21221000	SIMB	10.00.00 AW	Compliance Monitoring
AMMONIA NITROGEN		466.00 mg/l			3/5/1990	GRAB	2:25:00 PM	(
AMMONIA NITROGEN		780.00 mg/l			5/1/1990	SM GRAB		
AMMONIA NITROGEN		370.00 mg/l			10/23/1990	GRAB	11:15:00 AM	
AMMONIA NITROGEN		926.00 mg/l			10/9/1991	GRAB	1:00:00 PM	
AMMONIA NITROGEN		1,035.00 mg/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
AMMONIA NITROGEN		958.00 mg/l			2/3/1993	GRAB	10:17:00 AM	
AMMONIA NITROGEN		774.00 mg/l			3/14/1994	GRAB	9:25:00 AM	
AMMONIA NITROGEN		96.00 mg/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
	AVG:	675.63						
ARSENIC		0.00	*	100.00 ug/l	4/5/1991	SM GRAB	8:00:00 AM	
ARSENIC		10.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	
ARSENIC		10.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
ARSENIC		31.30 ug/l			2/3/1993	GRAB	10:17:00 AM	
ARSENIC		39.40 ug/l			3/14/1994	GRAB	9:25:00 AM	
ARSENIC		14.00 ug/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
ARSENIC		19.10 ug/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	17.69						
BENZENE		43.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
BENZENE		35.00 ug/l			3/7/1990	SM GRAB		
BENZENE		65.00 ug/l			4/24/1990	SM GRAB		
BENZENE		49.00 ug/l			5/1/1990	SM GRAB		
BENZENE		20.00 ug/i			5/23/1990	SM GRAB		
BENZENE		8.00 ug/i			8/24/1990	SM GRAB	10:00:00 AM	
BENZENE		16.00 ug/i			10/2/1990	SM GRAB	10:45:00 AM	
BENZENE		20.00 ug/l		•	11/9/1990	SM GRAB	11:30:00 AM	
ENZENE		23.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		Detection Limit	Date	Sample Type	<u>Time</u>	Reason for Analysis
BENZENE		48.00 ug/l			4/5/1991	\$M GRAB	8:00:00 AM	
BENZENE		0.00	*	1.00 ug/l	10/9/1991	GRAB	1:00:00 PM	
BENZENE		29.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	i
BENZENE		38.00 ug/l			3/12/1992	GRAB	11:30:00 AM	
BENZENE		17.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
BENZENE		25.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
BENZENE		0.00	*	5.00 ug/l	6/15/1993	SM GRAB	1:00:00 PM	
BENZENE		0.00	*	50.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
BENZENE		23.00 ug/l			3/14/1994	GRAB	9:25:00 AM	
BENZENE		13.00 ug/l			6/21/1994	SM GRAB		•
BENZENE		0.00	*	1.00 ug/l	6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
BENZENE		0.00 ug/l	*	16.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
BENZENE		5.30 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
BENZENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
BENZENE		4.50 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	20.07						
BOD 5-DAY		1,560.00 mg/l			3/5/1990	GRAB	2:25:00 PM	
BOD 5-DAY		11,000.00 mg/l			5/1/1990	SM GRAB		
BOD 5-DAY		6,600.00 mg/l			10/23/1990	GRAB	11:15:00 AM	
	AVG:	6,386.67						
BROMOBENZENE		0.00 ug/l	4	29.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
BROMOBENZENE		0.00 ug/l	*	6.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
BROMOCHLOROMETHANE		0.00 ug/l	*	9.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
BROMOCHLOROMETHANE		0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
BROMODICHLOMETHANE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

arameter		Result		<b>Detection Limit</b>	Date	Sample Type	Time	Reason for Analysis
BROMODICHLOROMETHANE		0.00 ug/l	*	11.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
BROMODICHLOROMETHANE		0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						t
BROMOFORM		0.00 ug/l	*	43.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
BROMOFORM		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
BROMOFORM		0.00 ug/l	*	9.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
BROMOFORM		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						
BROMOMETHANE		0.00 ug/l	*	38.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
BROMOMETHANE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
BROMOMETHANE		0.00 ug/l	*	8.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
BROMOMETHANE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						
CADMIUM		1.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
CADMIUM		0.00	*	50.00 ug/l	3/7/1990	SM GRAB		
ADMIUM		0.00	*	50.00 ug/l	4/6/1990	SM GRAB		
ADMIUM		0.00	*	5.00 ug/l	4/24/1990	SM GRAB		
ADMIUM		0.00	*	50.00 ug/l	5/1/1990	SM GRAB		
ADMIUM		0.00	*	10.00 ug/l	5/23/1990	SM GRAB		
ADMIUM		0.00	*	10.00 ug/l	7/3/1990	SM GRAB		
CADMIUM		0.00	*	10.00 ug/l	8/24/1990	SM GRAB	10:00:00 AM	
ADMIUM		0.00	*	5.00 ug/l	10/2/1990	SM GRAB	10:45:00 AM	
ADMIUM		0.00	*	0.50 ug/l	10/23/1990	GRAB	11:15:00 AM	
ADMIUM		0.00	*	5.00 ug/l	11/9/1990	SM GRAB	11:30:00 AM	
CADMIUM		0.00	*	5.00 ug/l	1/8/1991	SM GRAB	1:00:00 PM	
ADMIUM		0.00	*	5.00 ug/l	4/5/1991	SM GRAB	8:00:00 AM	
ADMIUM		48.70 ug/i			10/9/1991	GRAB	1:00:00 PM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		Detection Limit	<u>Date</u>	Sample Type	Time .	Reason for Analysis
CADMIUM		0.00	*	0.50 ug/l	11/25/1991	SM GRAB	10:00:00 AM	
CADMIUM		0.00	*	5.00 ug/l	1/6/1992	SM GRAB	10:00:00 AM	
CADMIUM		8.70 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	i
CADMIUM		6.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
CADMIUM		0.00	*	5.00 ug/l	1/14/1993	SM GRAB	10:30:00 AM	
CADMIUM		0.40 ug/l			2/3/1993	GRAB	10:17:00 AM	
CADMIUM		0.00	*	5.00 ug/l	6/15/1993	SM GRAB	1:00:00 PM	
CADMIUM		0.00	*	20.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
CADMIUM		0.00	*	20.00 ug/l	3/14/1994	GRAB	9:25:00 AM	
CADMIUM		0.00	*	5.00 ug/l	6/21/1994	SM GRAB		•
CADMIUM		0.00	*	10.00 ug/l	12/8/1994	SM COMP.		
CADMIUM		0.00	*	5.00 ug/l	6/29/1995	SM COMP.	10:30:00 AM	Semi-Annual Self Monitoring
CADMIUM		0.00	*	10.00 ug/l	10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
CADMIUM		27.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CADMIUM		0.00	*	50.00 ug/l	1/11/1996	SM COMP.	1:30:00 PM	Enforcement Monitoring
CADMIUM		0.00	*	10.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CADMIUM		18.50 ug/l			4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
	AVG:	3.56						
CARBON DISULFIDE		0.00 ug/l	*	12.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CARBON DISULFIDE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CARBON TETRACHLORIDE		0.00 ug/l	*	13.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CARBON TETRACHLORIDE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CARBON TETRACHLORIDE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CARBON TETRACHLORIDE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						
CBOD 5-DAY		6,000.00 mg/l	,		10/9/1991	GRAB	1:00:00 PM	
CBOD 5-DAY		6,471.00 mg/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

Parameter CBOD 5-DAY		Result 4,830.00 mg/l		<b>Detection Limit</b>	<u>Date</u> 2/3/1993	<u>Sample Type</u> GRAB	<u>Time</u> 10:17:00 AM	Reason for Analysis
CBOD 5-DAY		6,160.00 mg/l			3/14/1994	GRAB	9:25:00 AM	
	AVG:	5,865.25				5,1,2	V.=0,007	
CHLORDANE		0.00	*	30.00 ug/l	5/13/1992	SM GRAB	11:00:00 AM	<u> </u>
·	A) (C)			30.00 ug/i	3/13/1992	SIN GIVAD .	11.00.00 AM	
	AVG:	0.00						
CHLOROACETONITRILE		0.00 ug/i	*	17.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CHLOROACETONITRILE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CHLOROBENZENE		3.20 ug/l			3/7/1990	SM GRAB		
CHLOROBENZENE		2.50 ug/l			10/2/1990	SM GRAB	10:45:00 AM	•
CHLOROBENZENE		1.60 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
CHLOROBENZENE		1.60 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
CHLOROBENZENE		2.40 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
CHLOROBENZENE		3.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
CHLOROBENZENE		3.00 ug/i			5/13/1992	SM GRAB	11:00:00 AM	
CHLOROBENZENE		4.50 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
CHLOROBENZENE		0.00 ug/l	*	13.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CHLOROBENZENE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CHLOROBENZENE		0.00 ug/i	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CHLOROBENZENE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	1.82						
CHLOROETHANE		0.00 ug/l	*	8.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CHLOROETHANE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CHLOROETHANE		0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CHLOROETHANE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						·
CHLOROFORM	<del></del>	37.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		Detection Limit	Date	Sample Type	Time .	Reason for Analysis
CHLOROFORM		0.00 ug/l	*	9.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CHLOROFORM		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CHLOROFORM		0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CHLOROFORM		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	7.40						·
CHLOROMETHANE		0.00 ug/l	*	36.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CHLOROMETHANE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CHLOROMETHANE		0.00 ug/l	*	7.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CHLOROMETHANE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						•
CIS-1,2-DICHLOROETHENE		250.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
CIS-1,2-DICHLOROETHENE		140.00 ug/l			3/7/1990	SM GRAB		
CIS-1,2-DICHLOROETHENE		350.00 ug/l			4/24/1990	SM GRAB		
CIS-1,2-DICHLOROETHENE		250.00 ug/l			5/1/1990	SM GRAB		
CIS-1,2-DICHLOROETHENE		65.00 ug/l			5/23/1990	SM GRAB		
CIS-1,2-DICHLOROETHENE		47.00 ug/i			7/3/1990	SM GRAB		
CIS-1,2-DICHLOROETHENE		25.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
CIS-1,2-DICHLOROETHENE		37.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
CIS-1,2-DICHLOROETHENE		40.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
CIS-1,2-DICHLOROETHENE		40.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
CIS-1,2-DICHLOROETHENE		71.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
CIS-1,2-DICHLOROETHENE		22.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
CIS-1,2-DICHLOROETHENE		14.00 ug/i			1/14/1993	SM GRAB	10:30:00 AM	
CIS-1,2-DICHLOROETHENE		33.00 ug/l			6/21/1994	SM GRAB		
CIS-1,2-DICHLOROETHENE		0.00 ug/l	*	14.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CIS-1,2-DICHLOROETHENE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CIS-1,2-DICHLOROETHENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CIS-1,2-DICHLOROETHENE		1.80 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring	results	from O	rchard l	Hill Landfill:	Sample Loca	ition OHL	from 1/1/1	986 to 1/1/1997

<u>Parameter</u>	AVG:	<b>Result</b> 76.99		<u>Detection Limit</u>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
CIS-1,3-DICHLOROPROPENE		0.00 ug/l	* .	14.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
CIS-1,3-DICHLOROPROPENE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
CIS-1,3-DICHLOROPROPENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CIS-1,3-DICHLOROPROPENE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.00						
COD		10,496.00 mg/l		The Manual Na o	3/5/1990	GRAB	2:25:00 PM	
COD		9,000.00 mg/l			3/7/1990	SM GRAB		
COD		11,000.00 mg/l			4/6/1990	SM GRAB		
COD		10,700.00 mg/l			4/24/1990	SM GRAB		•
COD		11,700.00 mg/l			5/1/1990	SM GRAB		
COD		7,000.00 mg/i			5/23/1990	SM GRAB		
COD		19.30 mg/l			7/3/1990	SM GRAB		
COD		12,100.00 mg/l			8/24/1990	SM GRAB	10:00:00 AM	
COD		14,600.00 mg/l			10/2/1990	SM GRAB	10:45:00 AM	
COD		11,128.00 mg/l			10/23/1990	GRAB	11:15:00 AM	
COD		7,200.00 mg/l			11/9/1990	SM GRAB	11:30:00 AM	
COD		12,900.00 mg/l			1/8/1991	SM GRAB	1:00:00 PM	
COD		10,100.00 mg/l			4/5/1991	SM GRAB	8:00:00 AM	
COD		12,470.00 mg/l			10/9/1991	GRAB	1:00:00 PM	
COD		7,800.00 mg/l			11/25/1991	SM GRAB	10:00:00 AM	
COD		10,200.00 mg/l			1/6/1992	SM GRAB	10:00:00 AM	
COD		13,604.00 mg/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
COD		9,160.00 mg/l			2/3/1993	GRAB	10:17:00 AM	
COD		7,250.00 mg/l			3/14/1994	GRAB	9:25:00 AM	
COD		800.00 mg/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
COD		6,560.00 mg/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	9,323.20						

<sup>\*</sup> indicates monitoring result below detection limit

Parameter	Result		Detection Limit	Date	Sample Type	<u>Time</u>	Reason for Analysis
COPPER	41.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
COPPER	40.00 ug/l			3/7/1990	SM GRAB		
COPPER	30.00 ug/l			4/6/1990	SM GRAB		;
COPPER	50.00 ug/l			4/24/1990	SM GRAB		
COPPER	120.00 ug/l			5/1/1990	SM GRAB		
COPPER	50.00 ug/l			5/23/1990	SM GRAB		
COPPER	290.00 ug/l			7/3/1990	SM GRAB		
COPPER	80.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
COPPER	70.00 ug/i			10/2/1990	SM GRAB	10:45:00 AM	
COPPER	55.00 ug/l		,	10/23/1990	GRAB	11:15:00 AM	•
COPPER	100.00 ug/i			11/9/1990	SM GRAB	11:30:00 AM	
COPPER	60.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
COPPER	40.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
COPPER	121.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
COPPER	120.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	
COPPER	0.00	*	10.00 ug/l	1/6/1992	SM GRAB	10:00:00 AM	
COPPER	50.00 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
COPPER	80.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
COPPER	340.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
COPPER	204.00 ug/l			2/3/1993	GRAB	10:17:00 AM	
COPPER	200.00 ug/l			6/15/1993	SM GRAB	1:00:00 PM	
COPPER	0.00	*	400.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
COPPER	0.00	*	30.00 ug/l	3/14/1994	GRAB	9:25:00 AM	
COPPER	300.00 ug/l			6/21/1994	SM GRAB		
COPPER	280.00 ug/l			12/8/1994	SM COMP.		
COPPER	0.00	*	20.00 ug/l	6/29/1995	SM COMP.	10:30:00 AM	Semi-Annual Self Monitoring
COPPER	0.00	*	40.00 ug/l	10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
COPPER	100.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

arameter COPPER		<u>Result</u> 0.00	 *	Detection Limit 40.00 ug/l	<u>Date</u> 2/22/1996	Sample Type GRAB	<u>Time</u> 10:05:00 AM	Reason for Analysis Compliance Monitoring
COPPER		56.00 ug/l		10.00 ug.	4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
OFFER	AVG:	95.90			4/12/1330	OM OTOLD	1.55.00 1 141	Semi-Annual Sen Monitoring
								1
CYANIDE		276.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
CYANIDE		0.00	*	20.00 ug/l	3/7/1990	SM GRAB		
CYANIDE		165.00 ug/l			4/2/1990	GRAB	10:45:00 AM	
CYANIDE		0.00	*	20.00 ug/l	4/6/1990	SM GRAB		
CYANIDE		0.00	*	20.00 ug/l	4/24/1990	SM GRAB		
CYANIDE		0.00	*	20.00 ug/l	5/1/1990	SM GRAB		
CYANIDE		40.00 ug/l			5/23/1990	SM GRAB		•
CYANIDE		150.00 ug/l			7/3/1990	SM. GRAB		
CYANIDE		310.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
CYANIDE		20.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
CYANIDE		139.00 ug/l			10/23/1990	GRAB	11:15:00 AM	
CYANIDE		140.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
CYANIDE		30.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
CYANIDE		20.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
CYANIDE		579.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
CYANIDE		70.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	
CYANIDE		30.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
CYANIDE		97.40 ug/l			3/12/1992	GRAB	11:30:00 AM	
CYANIDE		20.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
CYANIDE		0.00	*	20.00 ug/l	1/14/1993	SM GRAB	10:30:00 AM	
CYANIDE		160.00 ug/l			2/3/1993	GRAB	10:17:00 AM	
CYANIDE		140.00 ug/l			2/15/1993	GRAB	1:47:00 PM	
CYANIDE		20.00 ug/l			6/15/1993	SM GRAB	1:00:00 PM	
CYANIDE		0.00	*	20.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
CYANIDE		90.00 ug/l		20.00 49.	3/14/1994	GRAB	9:25:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
CYANIDE		20.00 ug/l			6/21/1994	SM GRAB		
CYANIDE		30.00 ug/l			12/8/1994	SM GRAB		
CYANIDE		0.00	*	20.00 ug/l	6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
CYANIDE		58.33 ug/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
CYANIDE		0.00	*	20.00 ug/l	12/7/1995	SM GRAB	9:00.00 AM	Semi-Annual Self Monitoring
CYANIDE		0.00	*	20.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
CYANIDE		0.00	*	20.00 ug/l	4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
,	AVG	81 40						
DIBROMOCHLOROMETHANE		0.00 ug/l	*	19.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
DIBROMOCHLOROMETHANE		0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
DIBROMOCHLOROMETHANE		0.00 ug/l	*	4 00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
DIBROMOCHLOROMETHANE		0.00 ug/l	•	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
,	AVG	0 00						
DIBROMOMETHANE		0.00 ug/l	*	13.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
DIBROMOMETHANE		0.00 ug/i	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
A	AVG.	0 00						
DICHLOROACETONE		0.00 ug/l	*	22.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
DICHLOROACETONE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
F	AVG	0 00						
DICHLOROBROMOMETHANE		0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
A	4VG	0 00						
DICHLORODIFLUOROMETHANE		0.00 ug/l	*	6.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
A	AVG	0 00						
DIETHYL ETHER		0.00 ug/l	*	15.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
DIETHYL ETHER		108.00 ug/l		3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
A	AVG	54 00						
ENDRIN		0.00	*	10.00 ug/l	5/13/1992	SM GRAB	11:00:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring result	s from Orc	hard Hill Landfil	II: Sampl	e Location	OHL from	1/1/1986 to 1/1/1997

Parameter	AVG	Result 0 00		Detection Limit	<u>Date</u>	Sample Type	Time	Reason for Analysis
ETHYL METHACRYLATE		0.00 ug/l	*	58.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
ETHYL METHACRYLATE		0.00 ug/l	*	12.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	0 00						
ETHYLBENZENE		130.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
ETHYLBENZENE		78.00 ug/l			3/7/1990	SM GRAB		
ETHYLBENZENE		190.00 ug/l			4/24/1990	SM GRAB		
ETHYLBENZENE		140.00 ug/l			5/1/1990	SM GRAB		
ETHYLBENZENE		69.00 ug/l			5/23/1990	SM GRAB		
ETHYLBENZENE		23.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
ETHYLBENZENE		58.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
ETHYLBENZENE		38.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
ETHYLBENZENE		58.00 ug/i			1/8/1991	SM GRAB	1:00:00 PM	
ETHYLBENZENE		42.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
ETHYLBENZENE		37.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
ETHYLBENZENE		80.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
ETHYLBENZENE		72.00 ug/l			3/12/1992	GRAB	11:30:00 AM	
ETHYLBENZENE		66.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
ETHYLBENZENE		66.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
ETHYLBENZENE		39.00 ug/l			6/15/1993	SM GRAB	1:00:00 PM	
ETHYLBENZENE		0.00	*	50.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
ETHYLBENZENE		38.00 ug/l			3/14/1994	GRAB	9:25:00 AM	
ETHYLBENZENE		20.00 ug/l			6/21/1994	SM GRAB		
ETHYLBENZENE		0.00	*	1.00 ug/l	6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
ETHYLBENZENE		0.00 ug/i	*	13.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
ETHYLBENZENE		13.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
ETHYLBENZENE		6.00 ug/l		3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
ETHYLBENZENE		11.00 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>	AVG:	<b>Result</b> 53.08		<b>Detection Limit</b>	<u>Date</u>	Sample Type	Time	Reason for Analysis
HEPTACHLOR		0.00	*	8.00 ug/l	5/13/1992	SM GRAB	11:00:00 AM	
	AVG:	0.00						;
HEXACHLOROBUTADIENE		0.00 ug/l	*	25.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
HEXACHLOROBUTADIENE		0.00 ug/l	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
HEXACHLOROETHANE		0.00 ug/l	*	19.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
HEXACHLOROETHANE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
ODOMETHANE		0.00 ug/l	*	59.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
ODOMETHANE		0.00 ug/l	*	12.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
SOPROPYL BENZENE		0.00 ug/l	*	17.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
SOPROPYL BENZENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
EAD		34.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
.EAD		22.00 ug/l			3/7/1990	SM GRAB		
EAD		3.00 ug/l			4/6/1990	SM GRAB		
_EAD		38.00 ug/l			4/24/1990	SM GRAB		
EAD		30.00 ug/l			5/1/1990	SM GRAB		
EAD		120.00 ug/l			5/23/1990	SM GRAB		
_EAD		0.00	*	2.00 ug/l	7/3/1990	SM GRAB		
_EAD		0.00	*	20.00 ug/l	8/24/1990	SM GRAB	10:00:00 AM	
_EAD		32.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
EAD		23.00 ug/l			10/23/1990	GRAB	11:15:00 AM	
_EAD		0.00	*	5.00 ug/l	11/9/1990	SM GRAB	11:30:00 AM	
.EAD		10.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result	***	Detection Limit	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
LEAD		4.00 ug/i			4/5/1991	SM GRAB	8:00:00 AM	
LEAD		372.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
LEAD		18.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	(
LEAD		5.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
LEAD		20.00 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
LEAD		7.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
LEAD		15.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
LEAD		13.70 ug/l			2/3/1993	GRAB	10:17:00 AM	
LEAD		18.00 ug/l			6/15/1993	SM GRAB	1:00:00 PM	
LEAD		87.00 ug/l			12/8/1993	SM GRAB	1:20:00 PM	•
LEAD		14.50 ug/l			3/14/1994	GRAB	9:25:00 AM	
LEAD		0.00	*	25.00 ug/l	6/21/1994	SM GRAB		
LEAD		0.00	*	4.00 ug/l	12/8/1994	SM COMP.		
LEAD		0.00	*	2.00 ug/l	6/29/1995	SM COMP.	10:30:00 AM	Semi-Annual Self Monitoring
LEAD		2.40 ug/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
LEAD		0.00	*	50.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
LEAD		3.10 ug/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
LEAD		0.00	*	50.00 ug/l	4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
	AVG:	29.72						
LINDANE		0.00	*	10.00 ug/i	5/13/1992	SM GRAB	11:00:00 AM	
	AVG:	0.00						
MBAS		0.50 mg/l			5/23/1990	SM GRAB		
MBAS		500.00 ug/l			7/3/1990	SM GRAB		
MBAS		50.00 mg/l			3/31/1992	SM GRAB		
	AVG:	183.50						
MERCURY		0.00	*	0.50 ug/l	3/5/1990	GRAB	2:25:00 PM	
MERCURY		0.00	*	0.50 ug/l	3/7/1990	SM GRAB		
MERCURY		0.00	*	0.50 ug/l	4/6/1990	SM GRAB		

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		Detection Limit	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
MERCURY		0.00	•	0.50 ug/l	4/24/1990	SM GRAB		
MERCURY		0.00	*	0.50 ug/l	5/1/1990	SM GRAB		
MERCURY		0.00	*	5.00 ug/l	7/3/1990	SM GRAB		;
MERCURY		0.00	•	0.50 ug/l	8/24/1990	SM GRAB	10:00:00 AM	
MERCURY		0.00	*	0.50 ug/l	10/2/1990	SM GRAB	10:45:00 AM	
MERCURY		0.00	*	0.50 ug/l	10/23/1990	GRAB	11:15:00 AM	
MERCURY		0.00	*	0.50 ug/l	11/9/1990	SM GRAB	11:30:00 AM	
MERCURY		0.00	*	0.50 ug/l	1/8/1991	SM GRAB	1:00:00 PM	
MERCURY		0.00	*	0.50 ug/l	4/5/1991	SM GRAB	8:00:00 AM	
MERCURY		3.10 ug/l			10/9/1991	GRAB	1:00:00 PM	•
MERCURY		0.00	*	0.50 ug/l	11/25/1991	SM GRAB	10:00:00 AM	
MERCURY		0.00	*	0.50 ug/l	1/6/1992	SM GRAB	10:00:00 AM	
MERCURY		0.00	*	0.50 ug/l	3/12/1992	24 HOUR COMP.	11:30:00 AM	
MERCURY		0.00	*	0.50 ug/l	5/13/1992	SM GRAB	11:00:00 AM	
MERCURY		0.00	*	0.50 ug/l	2/3/1993	GRAB	10:17:00 AM	
MERCURY		0.00	*	5.00 ug/l	6/15/1993	SM GRAB	1:00:00 PM	
MERCURY		0.00	*	0.50 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
MERCURY		0.00	*	0.50 ug/l	3/14/1994	GRAB	9:25:00 AM	
MERCURY		0.00	*	0.50 ug/l	6/21/1994	SM GRAB		
MERCURY		0.00	*	1.00 ug/l	12/8/1994	SM COMP.		
MERCURY		0.00	*	0.50 ug/l	10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
MERCURY		0.00	*	0.50 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
MERCURY		0.00	*	0.50 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
MERCURY		0.00	*	0.50 ug/l	4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
	AVG:	0.11						
METHACRYLONITRILE		0.00 ug/l	*	18.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHACRYLONITRILE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

	Мо	nitoring results	from Ord	chard Hill Landfill: Sam	ple Location	OHL from 1/1/198	86 to 1/1/1997	
Parameter METHOXYCHLOR	AVG:	0.00 0.00	*	Detection Limit 10.00 ug/l	<u>Date</u> 5/13/1992	Sample Type SM GRAB	<u>Time</u> 11:00:00 AM	Reason for Analysis
ALETINI A ODVI ATE	AVG.		*	10.00	40404005	CDAD	4.00.00 444	
METHYL ACRYLATE		0.00 ug/l		43.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHYL ACRYLATE		0.00 ug/l	-	9.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYL BUTYL KETONE		0.00 ug/l	*	30.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHYL BUTYL KETONE		20.00 ug/l		6.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	10.00						
METHYL ETHYL KETONE		1,830.00 ug/l		42.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHYL ETHYL KETONE		9,190.00 ug/l		8.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	5,510.00						
METHYL METHACRYLATE		0.00 ug/l	*	44.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHYL METHACRYLATE		0.00 ug/l	*	9.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYL-T-BUTYL ETHER		0.00 ug/l	*	17.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHYL-T-BUTYL ETHER		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYLENE CHLORIDE		240.00 ug/l		<del></del>	3/5/1990	GRAB	2:25:00 PM	
METHYLENE CHLORIDE		200.00 ug/l			3/7/1990	SM GRAB		
METHYLENE CHLORIDE		420.00 ug/l			4/24/1990	SM GRAB		
METHYLENE CHLORIDE		530.00 ug/l			5/1/1990	SM GRAB		
METHYLENE CHLORIDE		120.00 ug/l			5/23/1990	SM GRAB		
METHYLENE CHLORIDE		44.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
METHYLENE CHLORIDE		28.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
METHYLENE CHLORIDE		30.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
METHYLENE CHLORIDE		170.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
METHYLENE CHLORIDE		76.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		Detection Limit	Date	Sample Type	Time	Reason for Analysis
METHYLENE CHLORIDE		42.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
METHYLENE CHLORIDE		41.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
METHYLENE CHLORIDE		35.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
METHYLENE CHLORIDE		23.00 ug/i			6/21/1994	SM GRAB		
METHYLENE CHLORIDE		0.00 ug/l	*	18.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
METHYLENE CHLORIDE		75.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
METHYLENE CHLORIDE		75.00 ug/l		4.00 ug/l	2/22/1996	GRAB	10.05:00 AM	Compliance Monitoring
METHYLENE CHLORIDE		63.00 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG	122 89						
N-BUTYL BENZENE		0.00 ug/l	*	18.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
N-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	0 00						
N-BUTYL CHLORIDE		0.00 ug/l	*	14.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
N-BUTYL CHLORIDE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	0 00						
N-PROPYL BENZENE		0.00 ug/l	*	17.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
N-PROPYL BENZENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	0 00						
NAPHTHALENE		0.00 ug/l	*	40.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
NAPHTHALENE		0.00 ug/l	*	8.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	0 00						
NICKEL		286.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
NICKEL		300.00 ug/l			3/7/1990	SM GRAB		
NICKEL		320.00 ug/l			4/6/1990	SM GRAB		
NICKEL		300.00 ug/l			4/24/1990	SM GRAB		
NICKEL		480.00 ug/l			5/1/1990	SM GRAB		
NICKEL		360.00 ug/l			5/23/1990	SM GRAB		

<sup>\*</sup> indicates monitoring result below detection limit

Parameter		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
NICKEL		540.00 ug/l			7/3/1990	SM GRAB		
NICKEL		460.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
NICKEL		380.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
NICKEL		260.00 ug/l			10/23/1990	GRAB	11:15:00 AM	
NICKEL		240.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
NICKEL		430.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
NICKEL		280.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
NICKEL		689.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
NICKEL		210.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	
NICKEL		260.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
NICKEL		175.00 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
NICKEL		340.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
NICKEL		250.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
NICKEL		896.00 ug/l			2/3/1993	GRAB	10:17:00 AM	
NICKEL		520.00 ug/l			6/15/1993	SM GRAB	1:00:00 PM	
NICKEL		0.00	*	400.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
NICKEL		288.40 ug/l			3/14/1994	GRAB	9:25:00 AM	
NICKEL		380.00 ug/l			6/21/1994	SM GRAB		
NICKEL		320.00 ug/l			12/8/1994	SM COMP.		
NICKEL		0.00	*	0.50 ug/i	6/29/1995	SM COMP.	10:30:00 AM	Semi-Annual Self Monitoring
NICKEL		0.00	*	40.00 ug/l	10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
NICKEL		300.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
NICKEL		93.80 ug/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
NICKEL		109.00 ug/l			4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
	AVG	315 57						
NITROBENZENE		0.00 ug/l	*	25.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
NITROBENZENE		0.00 ug/l	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	0 00						

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		Detection Limit	<u>Date</u>	Sample Type	Time	Reason for Analysis
OIL & GREASE		195.00 mg/l			3/5/1990	GRAB	2:25:00 PM	
OIL & GREASE		356.00 mg/l			3/27/1990	GRAB	10:30:00 AM	
OIL & GREASE		412.00 mg/l			3/29/1990	GRAB	10:20:00 AM	i
OIL & GREASE		408.00 mg/l			4/2/1990	GRAB	10:45:00 AM	
OIL & GREASE		10.00 mg/l			5/1/1990	SM GRAB		
OIL & GREASE		3.00 mg/l			5/23/1990	SM GRAB		
OIL & GREASE		3.00 mg/l			7/3/1990	SM. GRAB		
OIL & GREASE		139.00 mg/l			10/23/1990	GRAB	11:15:00 AM	
OIL & GREASE		238.70 mg/l			10/9/1991	GRAB	1:00:00 PM	
OIL & GREASE		365.00 mg/l			3/12/1992	GRAB	11:30:00 AM	
OIL & GREASE		2.00 mg/l			3/31/1992	SM GRAB		
OIL & GREASE		136.00 mg/l			2/3/1993	GRAB	10:17:00 AM	
OIL & GREASE		77.80 mg/l		•	3/14/1994	GRAB	9:25:00 AM	
	AVG:	180.42						
P-ISOPROPYL TOLUENE		0.00 ug/l	*	16.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
P-ISOPROPYL TOLUENE		0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
PCBs	· · · · · · · · · · · · · · · · · · ·	0.00	*	0.10 ug/l	12/12/1991	SM GRAB	9:00:00 AM	
PCBs		0.00	*	0.10 ug/l	3/12/1992	GRAB	11:30:00 AM	
PCBs		0.00	*	0.10 ug/l	5/13/1992	SM GRAB	11:00:00 AM	
PCBs		0.11 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
PCBs		0.50 ug/l			12/7/1994	GRAB		
PCBs		0.60 ug/l			12/12/1994	GRAB		
PCBs		0.50 ug/l			12/15/1994	GRAB		
PCBs		0.00	*	0.10 ug/l	6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
PCBs		0.00	*	0.10 ug/l	7/28/1995	SM GRAB	1:15:00 PM	Self-Monitoring
PCBs		0.00	*	0.10 ug/l	8/3/1995	SM GRAB	1:35:00 PM	Self-Monitoring
PCBs		0.00	*	0.10 ug/l	8/11/1995	SM GRAB	1:20:00 PM	Required for Discharge

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	Time	Reason for Analysis
PCBs		0.00	*	0.10 ug/l	8/18/1995	SM GRAB	1:30:00 PM	Required for Discharge
PCBs		0.00	*	0.10 ug/l	8/25/1995	SM GRAB	1:45:00 PM	Required for Discharge
PCBs		0.00	*	0.10 ug/l	9/8/1995	SM GRAB	2:30:00 PM	Required for Discharge
PCBs		0.00	*	0.10 ug/l	9/18/1995	SM GRAB	8:35:00 AM	Required for Discharge
PCB's		0.00	*	0.10 ug/l	10/26/1995	SM GRAB	10:30:00 AM	
PCBs		0.00	*	0.10 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
PCBs		0.00	*	0.10 ug/l	1/2/1996	SM GRAB	2:30:00 PM	
PCBs		0.00	*	0.10 ug/l	1/31/1996	SM GRAB	1:05:00 PM	Enforcement Monitoring
PCBs		0.00	*	0.10 ug/l	2/22/1996	SM GRAB	10:05:00 AM	
PCBs		0.00	*	0.10 ug/l	5/28/1996	SM GRAB	10:03:39 AM	Semi-Annual Self Monitoring
	AVG:	0.08						
PENTACHLOROETHANE		0.00 ug/l	*	25.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
PENTACHLOROETHANE		0.00 ug/l	*	5.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
PROPIONITRILE		0.00 ug/l	*	50.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
PROPIONITRILE		0.00 ug/l	*	10.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
SEC-BUTYL BENZENE		0.00 ug/l	*	19.00 ug/i	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
SEC-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
SILVER		0.80 ug/l			3/5/1990	GRAB	2:25:00 PM	<u> </u>
SILVER		0.00	*	5.00 ug/l	3/7/1990	SM GRAB		
SILVER		0.00	*	5.00 ug/l	4/6/1990	SM GRAB		
SILVER		0.00	*	5.00 ug/l	4/24/1990	SM GRAB		
SILVER		7.00 ug/l			5/1/1990	SM GRAB		
SILVER		5.00 ug/l			5/23/1990	SM GRAB		
SILVER		0.00	*	5.00 ug/l	7/3/1990	SM GRAB		
SILVER		0.00	*	5.00 ug/l	8/24/1990	SM GRAB	10:00:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>	Res	<u>ult</u>		Detection Limit	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
SILVER	0.	00	*	5.00 ug/l	10/2/1990	SM GRAB	10:45:00 AM	
SILVER	0.	00	*	0.50 ug/l	10/23/1990	GRAB	11:15:00 AM	
SILVER	0.	00	*	5.00 ug/l	11/9/1990	SM GRAB	11:30:00 AM	;
SILVER	0.	00	*	5.00 ug/l	1/8/1991	SM GRAB	1:00:00 PM	
SIL√ER	0.	00	*	5.00 ug/l	4/5/1991	SM GRAB	8:00:00 AM	
SILVER	0.	00	*	0.50 ug/i	10/9/1991	GRAB	1:00:00 PM	
SILVER	0.	00	*	5.00 ug/l	11/25/1991	SM GRAB	10:00:00 AM	
SILVER	6.	00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
SILVER	1.	50 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
SILVER	0.	00	*	0.50 ug/l	2/3/1993	GRAB	10:17:00 AM	
SILVER	0.	00	*	50.00 ug/l	3/14/1994	GRAB	9:25:00 AM	
SILVER	0.	00	*	10.00 ug/l	10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
SILVER	0.	00	*	10.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
А	VG: 0	.97						
SILVEX; PROPY. GLYCOL. ETHER	RE 0.	00	*	20.00 ug/l	5/13/1992	SM GRAB	11:00:00 AM	
A	VG: 0	00						
STYRENE	0.	00 ug/l	*	13.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
STYRENE	0.	00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
A	VG: 0.	00						
T-1,4-DICHLORO-2-BUTENE	0.	00 ug/l	*	16.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
T-1,4-DICHLORO-2-BUTENE	0.	00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
A	VG: 0	00						
T-BUTYL BENZENE	0.	00 ug/l	*	18.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
T-BUTYL BENZENE	0.	00 ug/l	*	4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
A	VG: 0.	00						
TETRACHLOROETHENE	0.	00 ug/l	*	40.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TETRACHLOROETHENE	1.	50 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

arameter		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	Time	Reason for Analysis
TETRACHLOROETHENE		0.00 u	g/l *	8.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TETRACHLOROETHENE		1.10 u	g/l	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	0.65						<b>:</b>
TETRACHLOROETHYLENE; P	PERCHLORO	2.20 u	 g/l		3/7/1990	SM GRAB		
•	AVG:	2.20						
TETRAHYDROFURAN		55.00 ц	 g/i	28.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TETRAHYDROFURAN		586.00 u	g/I	6.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	320.50						
TOLUENE		910.00 u	g/l		3/5/1990	GRAB	2:25:00 PM	11.
<b>TOLUENE</b>		570.00 u	g/l		3/7/1990	SM GRAB		•
TOLUENE		1.90 սյ	g/l		4/6/1990	SM GRAB		
TOLUENE		1,300.00 uį	g/l		4/24/1990	SM GRAB		
<b>FOLUENE</b>		890.00 u	g/l		5/1/1990	SM GRAB		
<b>TOLUENE</b>		550.00 u	g/l		5/23/1990	SM GRAB		
TOLUENE		810.00 ug	g/l		7/3/1990	SM GRAB		
FOLUENE		160.00 ug	g/l		8/24/1990	SM GRAB	10:00:00 AM	
<b>FOLUENE</b>		280.00 ug	g/l		10/2/1990	SM GRAB	10:45:00 AM	
<b>TOLUENE</b>		300.00 ug	g/l		10/23/1990	GRAB	11:15:00 AM	
TOLUENE		180.00 ug	g/l		11/9/1990	SM GRAB	11:30:00 AM	
<b>TOLUENE</b>		350.00 ug	g/l		1/8/1991	SM GRAB	1:00:00 PM	
<b>TOLUENE</b>		300.00 ug	g/l		4/5/1991	SM GRAB	8:00:00 AM	
OLUENE		331.00 ug	g/l		10/9/1991	GRAB	1:00:00 PM	
TOLUENE		480.00 ug	g/l		1/6/1992	SM GRAB	10:00:00 AM	
OLUENE		270.00 ug	g/l		3/12/1992	GRAB	11:30:00 AM	
OLUENE		270.00 ug	g/l		5/13/1992	SM GRAB	11:00:00 AM	
OLUENE		270.00 ug	g/l		1/14/1993	SM GRAB	10:30:00 AM	
OLUENE		160.00 ug	g/l		6/15/1993	SM GRAB	1:00:00 PM	
OLUENE		100.00 ug	~/1		12/8/1993	SM GRAB	1:20:00 PM	

<sup>\*</sup> indicates monitoring result below detection limit

Parameter TOLUENE	<u>Result</u> 154.00 ug/l		<b>Detection Limit</b>	<u>Date</u> 3/14/1994	Sample Type GRAB	<u>Time</u> 9:25:00 AM	Reason for Analysis
TOLUENE	190.00 ug/l			6/21/1994	SM GRAB		
TOLUENE	0.00	*	1.00 ug/l	6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
TOLUENE	81.00 ug/l		18.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TOLUENE	190.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TOLUENE	129.00 ug/l		4.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TOLUENE	140.00 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG 346 92						
TOTAL CHROMIUM	28.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
TOTAL CHROMIUM	40.00 ug/l			3/7/1990	SM GRAB		
TOTAL CHROMIUM	60.00 ug/i			4/6/1990	SM GRAB		
TOTAL CHROMIUM	40.00 ug/l			4/24/1990	SM GRAB		
TOTAL CHROMIUM	130.00 ug/l			5/1/1990	SM GRAB		
TOTAL CHROMIUM	110.00 ug/l			5/23/1990	SM GRAB		
TOTAL CHROMIUM	60.00 ug/l			7/3/1990	SM GRAB		
TOTAL CHROMIUM	80.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
TOTAL CHROMIUM	130.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
TOTAL CHROMIUM	120.00 ug/l			10/23/1990	GRAB	11:15:00 AM	
TOTAL CHROMIUM	40.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
TOTAL CHROMIUM	80.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
TOTAL CHROMIUM	60.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
TOTAL CHROMIUM	86.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
TOTAL CHROMIUM	40.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	
TOTAL CHROMIUM	50.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
TOTAL CHROMIUM	82.00 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
TOTAL CHROMIUM	60.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
TOTAL CHROMIUM	70.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
TOTAL CHROMIUM	58.90 ug/l			2/3/1993	GRAB	10:17:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>	Result		Detection Limit	Date	Sample Type	<u>Time</u>	Reason for Analysis
TOTAL CHROMIUM	150.00 ug/l			6/15/1993	SM GRAB	1:00.00 PM	
TOTAL CHROMIUM	0.00	*	200.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
TOTAL CHROMIUM	63.10 ug/l			3/14/1994	GRAB	9:25:00 AM	
TOTAL CHROMIUM	90.00 ug/l			6/21/1994	SM GRAB		
TOTAL CHROMIUM	60.00 ug/i			12/8/1994	SM COMP.		
TOTAL CHROMIUM	0.00	*	10.00 ug/l	6/29/1995	SM COMP.	10:30:00 AM	Semi-Annual Self Monitoring
TOTAL CHROMIUM	0.00	*	40.00 ug/l	10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
TOTAL CHROMIUM	60.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TOTAL CHROMIUM	124.60 ug/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TOTAL CHROMIUM	56.00 ug/l			4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
AVG	67 62						
TOTAL PETROLEUM HYDROCARBON	2.00 mg/l			6/21/1994	SM GRAB		
TOTAL PETROLEUM HYDROCARBON	2.00 mg/l			12/8/1994	SM GRAB		
TOTAL PETROLEUM HYDROCARBON	0.00	*	1.00 mg/l	7/10/1995	SM GRAB	11:40:00 AM	Semi-Annual Self Monitoring
TOTAL PETROLEUM HYDROCARBON	2.25 mg/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
TOTAL PETROLEUM HYDROCARBON	0.00	*	1.00 mg/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TOTAL PETROLEUM HYDROCARBON	7.05 mg/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TOTAL PETROLEUM HYDROCARBON	5.00 mg/l			4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
AVG	2 61						
TOTAL PHOSPHORUS	13.80 mg/l			3/5/1990	GRAB	2:25:00 PM	
TOTAL PHOSPHORUS	1.20 mg/l			10/23/1990	GRAB	11:15:00 AM	
TOTAL PHOSPHORUS	1.56 mg/l			10/9/1991	GRAB	1:00:00 PM	
TOTAL PHOSPHORUS	8.64 mg/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
TOTAL PHOSPHORUS	1.68 mg/l			2/3/1993	GRAB	10:17:00 AM	
TOTAL PHOSPHORUS	2.52 mg/l			3/14/1994	GRAB	9:25:00 AM	
TOTAL PHOSPHORUS	0.36 mg/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
TOTAL PHOSPHORUS	1.22 mg/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG	3 87						

<sup>\*</sup> indicates monitoring result below detection limit

Parameter	Result		Detection Limit	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
TOTAL SUSPENDED SOLIDS	352.00 mg/l			3/5/1990	GRAB	2:25:00 PM	
TOTAL SUSPENDED SOLIDS	470.00 mg/l			10/23/1990	GRAB	11:15:00 AM	
TOTAL SUSPENDED SOLIDS	334.00 mg/l			10/9/1991	GRAB	1:00.00 PM	
TOTAL SUSPENDED SOLIDS	356.00 mg/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
TOTAL SUSPENDED SOLIDS	398.00 mg/l			2/3/1993	GRAB	10:17:00 AM	
TOTAL SUSPENDED SOLIDS	237.50 mg/l			3/14/1994	GRAB	9:25:00 AM	
TOTAL SUSPENDED SOLIDS	77.50 mg/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
TOTAL SUSPENDED SOLIDS	190.00 mg/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG	301 88						
TOXAPHENE	0.00	*	500.00 ug/l	5/13/1992	SM GRAB	11:00:00 AM	
AVG	0 00						
TRANS-1,2-DICHLOROETHENE	1.60 ug/l			5/1/1990	SM GRAB		
TRANS-1,2-DICHLOROETHENE	56.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
TRANS-1,2-DICHLOROETHENE	1.10 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
TRANS-1,2-DICHLOROETHENE	0.00 ug/l	*	15.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TRANS-1,2-DICHLOROETHENE	0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TRANS-1,2-DICHLOROETHENE	0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TRANS-1,2-DICHLOROETHENE	0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55.00 AM	Semi-Annual Self Monitoring
AVG	8 39						
TRANS-1,3-DICHLOROPROPENE	0.00 ug/l	*	15.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TRANS-1,3-DICHLOROPROPENE	0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TRANS-1,3-DICHLOROPROPENE	0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TRANS-1,3-DICHLOROPROPENE	0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
AVG	0 00						
TRICHLOROETHENE	0.00 ug/l	*	15.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TRICHLOROETHENE	1.40 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TRICHLOROETHENE	0.00 ug/l	*	3.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG	0 47						

<sup>\*</sup> indicates monitoring result below detection limit

Parameter	Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	Time	Reason for Analysis
TRICHLOROETHYLENE	8.30 ug/l			3/5/1990	GRAB	2:25:00 PM	
TRICHLOROETHYLENE	8.60 ug/l			3/7/1990	SM GRAB		
TRICHLOROETHYLENE	6.80 ug/l			4/24/1990	SM GRAB		i
TRICHLOROETHYLENE	6.70 ug/l			5/1/1990	SM GRAB		
TRICHLOROETHYLENE	2.40 ug/i			5/23/1990	SM GRAB		
TRICHLOROETHYLENE	3.40 ug/l			7/3/1990	SM GRAB		
TRICHLOROETHYLENE	1.10 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
TRICHLOROETHYLENE	2.60 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
TRICHLOROETHYLENE	1.20 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
TRICHLOROETHYLENE	2.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	·
TRICHLOROETHYLENE	2.60 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
TRICHLOROETHYLENE	1.30 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
TRICHLOROETHYLENE	1.80 ug/l		•	1/14/1993	SM GRAB	10:30:00 AM	
TRICHLOROETHYLENE	0.00 ug/l	*	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
AVG:	3.49						
TRICHLOROFLUOROMETHANE	0.00 ug/l	*	10.50 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
TRICHLOROFLUOROMETHANE	71.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
TRICHLOROFLUOROMETHANE	0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
TRICHLOROFLUOROMETHANE	5.20 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
AVG:	19.05						
VINYL CHLORIDE	0.00 ug/l	*	11.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
VINYL CHLORIDE	0.00	*	1.00 ug/l	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
VINYL CHLORIDE	0.00 ug/l	*	2.00 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
VINYLCHLORIDE	2.70 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
VINYLCHLORIDE	2.20 ug/l			5/13/1992	SM GRAB	11:00:00 AM	
VINYLCHLORIDE	14.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

Parameter	Result	 Detection Limit	Date	Sample Type	Time	Reason for Analysis
VINYLCHLORIDE	3.00 ug/l	1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
AVG:	0.00	 				
VOLATILE SUSPENDED SOLIDS	62.00 mg/l		3/5/1990	GRAB	2:25:00 PM	1
VOLATILE SUSPENDED SOLIDS	112.00 mg/l		10/23/1990	GRAB	11:15:00 AM	
VOLATILE SUSPENDED SOLIDS	98.00 mg/l		10/9/1991	GRAB	1:00:00 PM	
VOLATILE SUSPENDED SOLIDS	104.00 mg/l		3/12/1992	24 HOUR COMP.	11:30:00 AM	
VOLATILE SUSPENDED SOLIDS	152.00 mg/l		2/3/1993	GRAB	10:17:00 AM	
VOLATILE SUSPENDED SOLIDS	117.50 mg/l		3/14/1994	GRAB	9:25:00 AM	
VOLATILE SUSPENDED SOLIDS	21.25 mg/l		10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
VOLATILE SUSPENDED SOLIDS	20.00 mg/l		2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	85.84					
XYLENE	460.00 ug/l	 	3/5/1990	GRAB	2:25:00 PM	
XYLENE	292.00 ug/l		3/7/1990	SM GRAB		
XYLENE	700.00 ug/l		4/24/1990	SM GRAB		
XYLENE	550.00 ug/l		5/1/1990	SM GRAB		
XYLENE	320.00 ug/l		5/23/1990	SM GRAB		
XYLENE	150.00 ug/l		7/3/1990	SM GRAB		
XYLENE	71.00 ug/l		8/24/1990	SM GRAB	10:00:00 AM	
XYLENE	293.00 ug/l		10/2/1990	SM GRAB	10:45:00 AM	
XYLENE	240.00 ug/l		10/23/1990	GRAB	11:15:00 AM	
XYLENE	161.00 ug/l		11/9/1990	SM GRAB	11:30:00 AM	
XYLENE	202.00 ug/l		1/8/1991	SM GRAB	1:00:00 PM	
XYLENE	142.00 ug/l		4/5/1991	SM GRAB	8:00:00 AM	
KYLENE	113.00 ug/l		10/9/1991	GRAB	1:00:00 PM	
XYLENE	270.00 ug/l		1/6/1992	SM GRAB	10:00:00 AM	
XYLENE	190.00 ug/l		3/12/1992	GRAB	11:30:00 AM	
(YLENE	179.00 ug/l		5/13/1992	SM GRAB	11:00:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>	R	<u>Result</u>		<b>D</b> 4 4 5 5 14 14	D. (	Sample Type		Reason for Analysis
XYLENE		71.00 ug/l		<u>Detection Limit</u>	<u>Date</u> 6/15/1993	SM GRAB	<u>Time</u> 1:00:00 PM	Reason for Allalysis
XYLENE		0.00	*	50.00 ug/l	12/8/1993	SM GRAB	1:20:00 PM	
XYLENE		79.00 ug/l		•	3/14/1994	GRAB	9:25:00 AM	,
XYLENE		75.00 ug/l			6/21/1994	SM GRAB		·
XYLENE		0.00	*	1.00 ug/i	6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
XYLENE		0.00 ug/l	*	23.00 ug/l	10/10/1995	GRAB	1:20:00 AM	Compliance Monitoring
XYLENE		55.00 ug/l		•	12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
XYLENE		23.20 ug/l		4.50 ug/l	2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
XYLENE		42.00 ug/l		1.00 ug/l	4/12/1996	GRAB	1:55:00 AM	Semi-Annual Self Monitoring
	AVG:	188.05		-				
ZINC		552.00 ug/l			3/5/1990	GRAB	2:25:00 PM	
ZINC		560.00 ug/i			3/7/1990	SM GRAB	2.20.00 1 111	
ZINC		480.00 ug/l			4/6/1990	SM GRAB		
ZINC		400.00 ug/l			4/24/1990	SM GRAB		
ZINC		820.00 ug/l			5/1/1990	SM GRAB		
ZINC		380.00 ug/l			5/23/1990	SM GRAB		
ZINC		900.00 ug/l			7/3/1990	SM GRAB		
ZINC		930.00 ug/l			8/24/1990	SM GRAB	10:00:00 AM	
ZINC		_						
		520.00 ug/l			10/2/1990	SM GRAB	10:45:00 AM	
ZINC		530.00 ug/l			10/23/1990	GRAB	11:15:00 AM	
ZINC		400.00 ug/l			11/9/1990	SM GRAB	11:30:00 AM	
ZINC		340.00 ug/l			1/8/1991	SM GRAB	1:00:00 PM	
ZINC	6	690.00 ug/l			4/5/1991	SM GRAB	8:00:00 AM	
ZINC		572.00 ug/l			10/9/1991	GRAB	1:00:00 PM	
ZINC	4	420.00 ug/l			11/25/1991	SM GRAB	10:00:00 AM	
ZINC	7	730.00 ug/l			1/6/1992	SM GRAB	10:00:00 AM	
ZINC	1	153.00 ug/l			3/12/1992	24 HOUR COMP.	11:30:00 AM	
ZINC	6	320.00 ug/l			5/13/1992	SM GRAB	11:00:00 AM	

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>	Result		Detection Limit	Date	Sample Type	<u>Time</u>	Reason for Analysis
ZINC	1,060.00 ug/l			1/14/1993	SM GRAB	10:30:00 AM	
ZINC	2,242.00 ug/l			2/3/1993	GRAB	10:17:00 AM	
ZINC	2,730.00 ug/l			6/15/1993	SM GRAB	1:00:00 PM	
ZINC	1,800.00 ug/l			12/8/1993	SM GRAB	1:20:00 PM	
ZINC'	1,005.20 ug/l			3/14/1994	GRAB	9:25:00 AM	
ZINC	1,020.00 ug/l			6/21/1994	SM GRAB		
ZINC	640.00 ug/l			12/8/1994	SM COMP.		
ZINC	0.00	*	10.00 ug/l	6/29/1995	SM COMP.	10:30:00 AM	Semi-Annual Self Monitoring
ZINC	17.00 ug/l			10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
ZINC	9,230.00 ug/l			12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
ZINC	940.00 ug/l			1/2/1996	SM COMP.	2:10:00 PM	Enforcement Monitoring
ZINC	5,020.00 ug/l			1/2/1996	SM COMP.	2:15:00 PM	Enforcement Monitoring
ZINC	3,340.00 ug/l			1/11/1996	SM COMP.	1:30:00 PM	Enforcement Monitoring
ZINC	1,230.00 ug/i			1/31/1996	SM COMP.	1:05:00 PM	Enforcement Monitoring
ZINC	990.00 ug/l			1/31/1996	SM COMP.	1:30:00 PM	Enforcement Monitoring
ZINC	2,025.00 ug/l			2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
ZINC	2,140.00 ug/l			4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
	AVG 1,312 18						
pH	9.20 S.U.			3/5/1990	GRAB	2:25:00 PM	
рН	8.50 S.U.			4/2/1990	GRAB	10:45:00 AM	
рH	8.80 S.U.			10/23/1990	GRAB	11:15:00 AM	
pН	8.30 S.U.			10/9/1991	GRAB	1:00:00 PM	
pН	8.40 S.U.			11/25/1991	SM GRAB	10:00:00 AM	
рН	8.10 S.U.			3/12/1992	GRAB	11:30:00 AM	
рН	8.20 S.U.			5/13/1992	SM GRAB	11:00:00 AM	
pH	8.60 S.U.			1/14/1993	SM GRAB	10:30:00 AM	
рН	8.30 S.U.			2/3/1993	GRAB	10:17.00 AM	
pH	8.00 S.U.			6/15/1993	SM GRAB	1:00:00 PM	
•							

<sup>\*</sup> indicates monitoring result below detection limit

<u>Parameter</u>	<u> </u>	Result	 <b>Detection Limit</b>	<u>Date</u>	Sample Type	Time	Reason for Analysis
рН		8.30 S.U.		12/8/1993	SM GRAB	1:20:00 PM	
pН		8.60 S.U.		3/14/1994	GRAB	9:25:00 AM	
рН		8.50 S.U.		6/21/1994	SM GRAB		
рН		9.00 S.U.		12/8/1994	SM GRAB		
рН `		7.30 S.U.		6/29/1995	SM GRAB	10:30:00 AM	Semi-Annual Self Monitoring
рН		6.90 S.U.		10/10/1995	GRAB	1:20:00 PM	Compliance Monitoring
рН		6.40 S.U.		12/7/1995	SM GRAB	9:00:00 AM	Semi-Annual Self Monitoring
рН		6.30 S.U.		2/22/1996	GRAB	10:05:00 AM	Compliance Monitoring
рН		6.80 S.U.		4/12/1996	SM GRAB	1:55:00 PM	Semi-Annual Self Monitoring
	AVG	8 03					

•

<sup>\*</sup> indicates monitoring result below detection limit



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

September 18, 1996

Mr. Ralph Balkema Orchard Hill Landfill 3378 Hennesy Rd.. Watervliet, Michigan 49098

Dear Mr. Balkema

Please be aware that a Freedom Of Information Act request has be filed by Paw Paw Lake Wastewater Treatment Plant for Orchard Hill Landfill's analytical sample results. Provided to Paw Paw Lake was the complete analytical history of the hauled leachate from Orchard Hill Landfill discharged at the Kalamazoo Water Reclamation Plant. All sampled parameters were included in the provided information. A copy of the information has been enclosed for reference. If you have any questions or concerns, please feel free to contact me at (616) 337 -8706.

Steven M. Rochow

Steven M. Rochow

**Industrial Pretreatment Inspector** 

c: Robert O'Day, Industrial Inspections Supervisor Bruce Merchant, Wastewater Systems Manager

# INTER-OFFICEMEMO

To: Robert H. Cinabro, City Attorney

From: Bruce Merchant, Wastewater System Manager

Date: September 9, 1996

Subject: Freedom of Information Act Request

Attached please find a Freedom of Information Act request from the Wastewater Superintendent of the Paw Paw Lake Area Wastewater Treatment Plant regarding information the City of Kalamazoo has on file dealing with waste loads from the Orchard Hill Landfill in Watervliet, Michigan. The Kalamazoo Water Reclamation Plant currently accepts hauled leachate waste from the landfill on a weekly basis. The request from Paw Paw Lake Area plant has been made because the landfill is considering sending their waste loads via sewer pipe directly to the Paw Paw Lake Area plant.

Under normal circumstances, I do not require another wastewater treatment plant to file a formal Freedom of Information Act request for general information we may have available. In this case, I felt it was necessary since the request is for specific information about a specific discharge. In addition, there seems to be some "political pressure" on Paw Paw Lake Area Wastewater Treatment Plant to accept the landfill discharge involving the landfill and Watervliet Township where the landfill is actually located.

Please note that I wanted to make you aware of this request as well as the reasons behind my concern to have a formal request made. I will keep you advised if any additional issues arise.

#### attach

c: S. Rochow

R. DeMink

file

# PAW PAW LAKE AREA WASTEWATER PLANT

4689 DeField Road COLOMA MICHIGAN 49038

Phone 616-468-7888

Mr. Bruce Merchant Kalamazoo Wastewater Facility 1415 North Harrison Kalamazoo, MI 49007-2565

Dear Mr. Merchant:

The Paw Paw Lake Area Wastewater Treatment Plant is reviewing potential Industrial discharges. Through the Freedom of Information Act, I am requesting Lab Data, Pretreatment Requirements and Restrictions concerning the Leachate from Orchard Hill Landfill located at 3290 Hennessey Rd., Water-vliet, MI. 49098.

Thank you for your time and that of your staff.

Sincerely,

9/4/96

T.C. Melville Superintendent



Facility: Orchard Hill Landfill 3378 Hennesy Road Watervliet MI 49098

**Construction Supervisor** 

# **KALAMAZOO WATER RECLAMATION PLANT**

July 10, 1996

Reporting Period: January 1, 1996 - June 30, 1996

#### INDUSTRIAL USER SELF-MONITORING REPORT

Due:

Sample Code:	OHL <u>Location</u>	: Hauled wa Reclamatio	ste prior to or di on Plant.	uring disch	narge at the Kala	amazoo Water
Monitoring Rec	uirements:					
<u>Pollutants</u>	•	Daily Max.	Monthly Avg. <u>Max.</u>	<u>Unit</u>	<u>Results</u>	Sample Type
BETX		15		mg/l		GRAB
CADMIUM		40		ug/l		GRAB
COPPER		2230		ug/i		GRAB
CYANIDE		250		ug/l		GRAB
LEAD		110		ug/l		GRAB
MDNR SCAN 1	1			J	Attach Data	GRAB
MERCURY		0		ug/i		GRAB
NICKEL		1590		ug/l		GRAB
PCBs		0		ug/l		GRAB
TCLP (Annual	lv)			•		GRAB
TOTAL CHRO		4670		ug/l		GRAB
TOTAL PETRO	DLEUM HYDROCARBON	100		mg/l		GRAB
ZINC		5300		ug/l		GRAB
pН		6.2 - 9.8		S.U.		GRAB
	indicates Not Required		GPD)			
Date and Time	of Sampling:		Composite: _	<del></del>		
Grab: _			Grab:			
Grab:			Grab:			
Note: If more t	than one batch is dischar ior to analysis.	ged on the o				n and composite
system designed in persons or persons is, to the best of n	alty of law that this document to assure that qualified perso s who manage the system, or t ny knowledge and belief, true, ding the possibility of fine and	nnel properly g hose persons accurate, and	gather and evaluate directly responsible complete. Lam awa	the information for gathering that there	ition submitted. Ba a the information. I	sed on my inquiry of the information submitte
TCLP and PCB and	alysis must be conducted on a	n annual basis.				
Contact:						
	Ralph O. Balkema		<del></del>		Date	_
Title:	Construction Superv	isor				



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

Mr. Ralph O. Balkema Construction Supervisor Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Balkema:

Enclosed please find the most recent sampling results from your facility. If you have any questions, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

**Industrial Services Records Specialist** 

c: file

enc.

			•
INSPECTIONMEETING _	<del></del>		
Name of Facility <u>Orchord Ho</u> Address Contact Randy B		Date 2 Time 8	-7-96 1:40 an
Purpose: verity resumples	<b>·.</b> ,	per 1-3-96 L	OL
Items Discussed: per 1-23-96	phone convers	ation 2 add	1/ 2n
resamples have been coll	lected -duta v	lot you lecei	ved
PCB monthly sumple for	nen cull also	has been so	BATZE
2 loads to be deliver	ed Didais		•
	7.709		
	· · · · · · · · · · · · · · · · · · ·		
Observations:			
			<del></del>
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Further Action Required:			
Further Action Required:	· · · · · · · · · · · · · · · · · · ·		
Further Action Required:			
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File: General Correspondence	· ·		
File: General Correspondence			
File: General Correspondence Inspection Lab Data Self-Monitoring/Compliance	· ·		······································

THE CITY OF



#### PUBLIC SERVICES DEPARTMEN

Wastewater Division 1415 N Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 Fax (616) 337-8699

January 03, 1996

Certified Mail #Z 187 666 775

Mr. Ralph O. Balkema Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Balkema:

We have received the most recent sampling results from your facility. As you are aware, the discharges from the following location(s) have levels which are above the allowable discharge limitations:

OHL

12/7/95

ZINC

9,230.00 ug/l

To address the Zinc issue you will need to perform sampling so as to collect three (3) grab samples in compliance with the respective limitations. These samples should be taken on three consecutive days, and each be representative of a normal day's discharge. Please conduct this resampling and submit the analytical results to my office within thirty days.

If you have any questions, please contact me at 337-8705.

Sincerely,

Robert C. O'Day Industrial Inspection Supervisor

c: Tim Meulenhera, Industrial Services Sune

 c: Tim Meulenberg, Industrial Services Supervisor Steve Rochow file



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

November 14, 1995

Mr. Ralph O. Balkema Construction Supervisor Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Balkema:

Enclosed please find the most recent sampling results from Orchard Hill Landfill. If you have any questions, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

yeliecca) Anatuk

**Industrial Services Records Specialist** 

c: file

enc.





#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

October 3, 1995

Certified Mail # Z 187 666 767

Mr. Ralph Balkema Orchard Hill Landfill 3290 Hennesey Road Watervliet, MI 49098

Dear Mr. Balkema:

We have reviewed your request to reduce the amount of sampling associated with the delivery of leachate to the Kalamazoo Water Reclamation Plant (KWRP). You are currently performing low level PCB analysis for every batch treated for delivery to the KWRP. All loads delivered to the KWRP in 1995 have been associated with the opening of the new cell at the Orchard Hill Landfill Site. Analysis for all eight batches associated with 16 loads delivered to the KWRP in 1995 have indicated that there are no detectable levels of PCBs.

Your request to reduce the sampling requirement to a monthly schedule appears to be an acceptable level of oversight at this time. Orchard Hill Landfill is now required to perform low level PCB analysis on the first monthly batch of leachate delivered to the KWRP from this point forward. The relaxation in monitoring requirements applies to loads of leachate associated with the new cell only. Orchard Hill Landfill is not to deliver any loads of leachate from the old cell until it has demonstrated installation of pretreatment technology capable of consistently removing PCBs.

The KWRP will perform occasional monitoring for PCBs independently of monitoring performed by Orchard Hill Landfill. The monitoring performed by the KWRP will verify the reliability of reducing the monitoring performed by Orchard Hill Landfill. If PCBs are detected in any monitoring performed by KWRP Personnel, it will then be necessary to return to the prior arrangement of monitoring every load prior to delivery. I may be reached at 337-8716 if you have any questions regarding this matter.

Sincerely.

Tim Meulenberg

Industrial Services Supervisor

Tun Meulen berg

c:

R. DeMink

B. Merchant

B. O'Day

S. Rochow

file

#### ORCHARD HILL SANITARY LANDFILL

3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

September 27, 1995

Tim Meulenburg City of Kalamazoo Water Reclamation Dept. 1415 N. Harrison St. Kalamazoo, MI 49007

Dear Tim,

It was nice to speak with you again.

During our conversation on 9/26, we discussed the testing procedure for our leachate which is now being taken from a new cell at Orchard Hill Sanitary Landfill. Currently we run a low level PCB test on every two loads of leachate hauled into the Water Reclamation Plant.

Since July, we have run seven low level PCB tests on our new leachate and they have all been below the detection limit (BDL) for PCB's. Based on this information and due to the expense of this frequent testing we are requesting that the same testing be done only on a monthly basis.

It is understood that testing and approval will be needed prior to the disposal of any leachate from the old landfill cell.

If you find these guide lines acceptable please acknowledge.

If you wish to discuss these testing procedures further feel free to call at 616 463-5588

Thank you for your consideration,

Raløn O. Balkema

rb



#### KALAMAZOO WATER RECLAMATION PLANT

#### INDUSTRIAL USER SELF-MONITORING REPORT

Facility:	<b>Orchard Hill</b>	Landfill

3378 Hennesy Road Watervliet Mi 49098 **Due:** January 10, 1996

Reporting Period: July 1, 1995 - December 31, 1995

Sample Code: OHL

<u>Location:</u> Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.

Monitorina Requirements:

Pollutants	Daily Max.	Monthly Avg. Max.	<u>Unit</u>	Results	Sample Type
BETX	15		mg/l		GRAB
CADMIUM	40		ug/l		GRAB
COPPER	2230		ug/l		GRAB
CYANIDE	250		ug/l		GRAB
LEAD	110		ug/l		GRAB
MDNR SCAN 1				Attach Data	GRAB
MERCURY	0		ug/l		GRAB
NICKEL	1590		ug/l		GRAB
PCBs	0		ug/l		GRAB
TCLP		S# 1			GRAB
TOTAL CHROMIUM	4670		ug/l		GRAB
TOTAL PETROLEUM HYDROCARBON	100		mg/l		GRAB
ZINC	5300		ug/l		GRAB
pH	6.2 - 9.8		S.U.		GRAB

N/R indicates Not Required		ired PLEASE ATTA	ACH COPIES OF LABORATORY RESULTS	
Flow Inform	nation:	Average Daily (GPD)	Maximum Daily (GPD)	
Date and Tin	ne of Sampling:	Composite	):	
Grab	):	Grab:		
Grab	):			
	re than one batch is di prior to analysis.	scharged on the day of sampli	ing, please sample each batch and composite	!
system designers person or persons, to the best of	ed to assure that qualified ons who manage the syste of my knowledge and belie	personnel properly gather and eval m, or those persons directly respons	pared under my direction or supervision in accordance of luate the information submitted. Based on my inquiry of sible for gathering the information, the information subr aware that there are significant penalties for submitting lations.	of th
TCLP and PCB	analysis must be conducte	d on an annual basis.		
Contact:				
	Ralph O. Balkema	1	Date	
Title:	Construction Su	ıpervisor		



DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation
1415 N. Harrison
Kalamazoo, Michigan 49007-2565
[616] 337-8157
FAX (616] 337-8699

June 23, 1995

Certified Mail # Z 392 448 935

Mr. Ralph O. Balkema Orchard Hill Landfill 3378 Hennesy Road Watervliet MI 49098

Dear Mr. Balkema:

On June 9, 1995 the City of Kalamazoo issued a press release notifying the public that the Kalamazoo Water Reclamation Plant (KWRP) experienced violations in the month of May. The KWRP violated its National Pollutant Discharge Elimination System (NPDES) Permit Limit of 0.0000011 mg/l for Mercury. Monitoring performed on May 18 and 25, 1995 indicated Mercury concentrations of 0.0002 mg/l in the wastewater effluent discharged to the Kalamazoo River.

The City of Kalamazoo considers this to be a serious violation of the KWRP NPDES Permit issued by the Michigan Department of Natural Resources (MDNR). In a formal notification to the MDNR the City of Kalamazoo committed to several initiatives to help address and alleviate such violations in the future. Of particular importance for us is the commitment to increase the efforts by Industrial Services in working with the industrial user community. Our goal is to provide assistance to ensure that adequate and appropriate controls are in place to reduce or eliminate Mercury discharges to the wastewater system.

At this time we would like to request a concerted effort on your behalf to inform your organization of the importance to achieve a Mercury free environment within your work place. If this is not possible then it is important to assure that procedures are implemented and complied with to provide for proper disposal. Our staff is available for assistance and will be focusing their attention on this topic during future inspections.

We appreciate your cooperation in this effort.

Sincerely,

Tim Meulenberg

Industrial Services Supervisor

in Meulenber

C:

Kenneth P. Collard Bruce Minsley Robert DeMink Bruce Merchant Robert O'Day Sandy Kuilema Steve Lewis Steve Rochow John Ward file



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

April 10, 1995

Mr. Ralph O. Balkema Orchard Hill Landfill 3378 Hennesy Road Watervliet MI 49098

Dear Mr. Balkema:

Enclosed please find 1995 Industrial User Self-monitoring report forms which have been prepared for your convenience. Please note that the reporting form has been adjusted to reflect the monitoring requirements specified in the Individual Control Document issued to your facility. The information requested is the minimum required by current Federal Pretreatment Regulations (40 CFR 403.12).

It is important that <u>all</u> of the requested information be completed on the enclosed form, and that the form be signed by the appropriate "Responsible Party" designated below the signature line. (Parameters which are not required are shown as "N/R" on the reporting form. A blank line is provided for the results and units of those parameters which require monitoring.) All sampling and flow data should be submitted to our office within 10 days after the end of the reporting period specified on the enclosed forms.

Please remember that if the sampling indicates a violation, <u>you must notify our office within</u> **24 hours**.

If you have any questions regarding your reporting requirements, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

Industrial Services Records Specialist

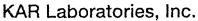
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### KALAMA\_JO WATER RECLAMA\_ION PLANT

	INDU	ISTRIAL USER SELF-MON	ITORING REPORT	
Facility:	Orchard Hill Landfil 3378 Hennesy Roa Watervliet, MI 490	d	Due: July 10, 199	95
Reporting	Period: January 1, 1	995 - June 30, 1995		
Sample Co	ode: OHL			
Location:	Hauled waste prior	to or during discharge at	the Kalamazoo Water Red	clamation Plant.
Monitoring	Requirements:			
	<u>Pollutants</u>	<u>Daily Max.</u> <u>mg/L</u>	<u>Results/Units</u>	Sample Type
Cadmium	, Т	0.040		Grab
Chromiun	n, T	4.67		Grab
Copper, 7	Г	2.23		Grab
Lead, T		0.110		Grab
Nickel, T		1.59		Grab
Zinc, T		5.30		Grab
Cyanide,	Т	0.250		Grab
Petroleun	n Hydrocarbon	100		Grab
рН		6.2-9.8 S.U.		Grab
Mercury,	Т	prohibited		Grab
PCBs, T		prohibited	Annual	Grab
TCLP			Annual	Grab
MDNR So	cans 1 & 2			Grab
N/R	indicates "Not Requir	ed" PLEASE ATTACH C	OPIES OF LABORATORY	RESULTS
Flow Infor	mation:	Average Daily	Maximum Daily	,
accordance v Based on my information,	vith a system designed to a inquiry of the person or pe the information submitted is	ocument and all attachments were some that qualified personnel progressors who manage the system, or some the best of my knowledge atting false information, including	operly gather and evaluate the in or those persons directly respon- and belief, true, accurate, and co	nformation submitted. sible for gathering the omplete. I am aware tha

Date

Jerry Miller



4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

February 23, 1995

Orchard Hills Landfill 3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Dan Batts

Dear Mr. Batts:

I cannot over-emphasize my concern about the matter of the analysis for PCB's in leachate samples submitted to various laboratories. Apparently, KAR is the only lab you have found that is capable of detecting PCB in your leachate samples. Analytically speaking, it is very easy not to find PCB's in a sample, yet it is highly unlikely to analyze for PCB's and have a "false positive" result. I understand your dilemma - if you dispose of the waste on the assumption of no PCB's present supported by laboratory report(s) and later it is proven that the leachate does in fact contain PCB's then Orchard Hills Landfill will be ultimately responsible.

The key to sorting this out is asking the correct questions. Here's a few that need to be asked of the laboratories:

Staffing: Is the level of training and experience adequate for the analyst that analyzed your samples? Mark Zweifka, Sr. Chemist analyzed all your samples at KAR Labs. He has a B.S. in Chemistry from MSU and has 9 years of Gas Chromatography (GC) experience.

Competence: Has the operator that analyzed your samples demonstrated competence? This is a Method requirement and involves the analysis of a minimum of 4 replicate Laboratory Fortified Reagent Water samples. Precision and accuracy is established from this. This is often overlooked with staff turnover and vacation fills.

Detection Limits: Can it be proven that the analyst can "see" down to the low levels stated in the lab report? This is established with a Method Detection Limit Study (MDL Study). Mark Zwiefka has established a method detection limit of 0.02385-0.0310 ug/L prior to analyzing any of your samples. This proves Mark is capable of "seeing" down to the reporting level stated on our reports.

Accuracy: Were all necessary cleanup steps performed and what was the spike recovery at comparable levels? This is critical. Leachate samples typically contain sulfur and carboxylic acids which will interfere with the measurement process (negative bias - a result that is less than the true value) if not removed. Sulfur must be removed with a separate cleanup step and carboxylic acids must be removed with yet another cleanup step. All Orchard Hills leachate samples went through this process. If the cleanup steps are not performed then the result will likely be "non detect" for PCB's. The effectiveness of the cleanup is determined by spiking PCB into the sample at a concentration close to reporting level and measuring it to determine recovery. KAR Lab's recovery of Arochlor 1242 at the 0.1 ug/L spike level for extraction batches associated with your samples were 70%, 74%, 83%, 95%, 71% and 62%. This is acceptable recoveries for this type of sample matrix.

Precision: What is the true precision of low level positives? Precision measures the ability to reproduce the same result over and over again. Non-detectable amounts must not be included in this statistical analysis or it will heavily bias the result and make the measurement process appear better than it really is. For example, a lab could analyze several replicates, not find any PCB's and state that they have a precision of zero relative percent difference. KAR Lab's precision between duplicate analyses spiked with Arochlor 1242 at the 0.1 ug/L for extraction batches associated with your samples were 5.6, 13 and 14.9 relative percent difference. This is acceptable precision for this type of sample matrix.

Equipment: What equipment was used? The only equipment allowed in regulatory approved PCB methods that have the required sensitivity (EPA 608, 8080 or 8081) is the Gas Chromatograph with Electron Capture Detector (GC-ECD). GC-Mass Spec or GC-ELCD does not possess the sensitivity required for low-level PCB work. Dual-column confirmation is required on positive results. KAR uses a GC with dual-high resolution columns and dual ECD's. All positives were confirmed, qualitatively and quantitatively, on both columns.

Thank you for bringing this matter to my attention, and I am terribly sorry for the inconvenience this has caused you. What is contained in this letter is true to the best of my knowledge and nothing has been selectively omitted for the purpose of making our case. It seems ironic to me that KAR Labs can perform a method the hard way, the right way, with all the cleanup and quality control, and be at a competitive disadvantage to a laboratory that cuts corners to maximize profits. I urge you to contact us, especially William H. Bouma, Ph.D. for further advice on this problem. Dr. Bouma has over 20 years

#### KAR Laboratories, Inc.

Wastewater experience including Superintendent at Grand Rapids WWTP. We are here to help you in any way we can.

Sincerely,

William G. Rauch Technical Director

cc: R. Balkema, T. Meulenberg, W. Bouma



#### LETTER OF VIOLATION

#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

Certified Mail # P 242 167 677

December 28, 1994

Mr. Ralph O. Balkema Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Balkema:

We have recently received analytical results for grab samples collected from two (2) separate loads of Orchard Hill Landfill leachate. The load of leachate delivered to the City of Kalamazoo Water Reclamation Plant (KWRP) on December 7, 1994 contained 0.5 ug/l of PCB Aroclor 1242. The next load of leachate delivered on December 12, 1994 had 0.6 ug/l of PCB Aroclor 1242. The City of Kalamazoo Sewer Use Regulation 91-1, prohibits the discharge of PCBs to the KWRP.

An investigation of past and present uses of PCBs, indicates there are many potential sources that may be properly disposed into any Type II Landfill. PCBs are currently used in transformers and capacitors and were extensively used in fluorescent lamp ballasts manufactured before 1979. Only ballasts manufactured after 1979 require labeling if PCBs were used. Additional sources include: cutting oils, heat transfer and hydraulic fluids; carbonless copy paper; plasticizers in rubbers, synthetic resins, paints, adhesives and caulking compounds; dusting agents and fillers in casting wax.

As we discussed in our December 27, 1994 telephone conversation, Orchard Hill Landfill will be required to document there are no PCBs in every load of leachate delivered to the KWRP. A detection limit of 0.1 ug/l will be required on all analysis. If you have any questions regarding this matter, please call me at (616) 337-8716.

Sincerely,

Tim Meulènberg,

Industrial Services Supervisor

c:

B. DeMink

B. Merchant

B. O'Day

S. Rochow

file



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

May 16, 1994

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

Enclosed please find 1994 Industrial User Self-monitoring report forms which have been prepared for your convenience. Please note that the reporting form has been adjusted to reflect the monitoring requirements specified in the Individual Control Document recently issued to your facility. The information requested is the minimum required by current Federal Regulations (40 CFR 403.12).

It is important that all of the requested information be completed on the enclosed form, and that the form be signed by the appropriate "Responsible Party" designated below the signature line. (Parameters which are not required are shown as "N/R" on the reporting form. A blank line is provided for the results and units of those parameters which require monitoring.) All sampling and flow data should be submitted to our office within 10 days after the end of the reporting period specified on the enclosed forms.

Please remember that if the sampling indicates a violation, you must notify our office within 24 hours.

If you have any questions regarding your reporting requirements, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

**Industrial Services Records Specialist** 

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rjg/wp/94 let

c: file

KALAMAZO WATER RECLAMA ON PLANT INDUSTRIAL USER SELF-MONITORING REPORT Orchard Hill Landfill Due: July 10; 1994 Facility: 3378 Hennesy Road Watervliet, MI 49098 Reporting Period: January 1, 1994 - June 30, 1994 Sample Code: OHL Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant. Location: Monitoring Requirements: Results/Units Sample Type **Pollutants** Daily Max. mg/L 0.040 Grab Cadmium, T 4.67 Grab Chromium, T 2.23 Grab Copper, T 0.110 Grab Lead, T Nickel, T 1.59 Grab 5.30 Grab Zinc, T Grab Cyanide, T 0.250 Grab Petroleum Hydrocarbon 100 pΗ 6.2-9.8 S.U. Grab prohibited Grab Mercury, T PCBs, T prohibited Annual Grab Annual Grab **TCLP** MDNR Scans 1 & 2 Grab PLEASE ATTACH COPIES OF LABORATORY RESULTS N/R indicates "Not Required" Flow Information: Average Daily Maximum Daily I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Date

Jerry Miller

#### KALAMAZO WATER RECLAMA ON PLANT

•	INDUSTR	AL USER SELF-MON	NITORING REPORT	
Facility:	Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098		Due: January 10,	1995
Reporting I	Period: July 1, 1994 - De	ecember 31, 1994		
Sample Co	de: OHL			
Location:	Hauled waste prior to o	r during discharge at	the Kalamazoo Water Rec	lamation Plant.
Monitoring	Requirements:			
	<u>Pollutants</u>	<u>Daily Max.</u> <u>mg/L</u>	Results/Units	Sample Type
Cadmium	, T	0.040		Grab
Chromium	1, T	4.67		Grab
Copper, T		2.23		Grab
Lead, T		0.110	**************************************	Grab
Nickel, T		1.59		Grab
Zinc, T		5.30	And the second second second second	Grab
Cyanide,	T	0.250		Grab
Petroleum	n Hydrocarbon	100		Grab
рН		6.2-9.8 S.U.		Grab
Mercury,	Т	prohibited		Grab
PCBs, T		prohibited	Annual	Grab
TCLP			Annual	Grab
MDNR Sc	ans 1 & 2			Grab
N/R	indicates "Not Required"	PLEASE ATTACH	COPIES OF LABORATORY	RESULTS
Flow Inform	mation:A	verage Daily	Maximum Daily	
accordance v Based on my information, t	with a system designed to assure inquiry of the person or persons the information submitted is, to a e significant penalties for submitt	that qualified personnel who manage the system he best of my knowledge	vere prepared under my direction properly gather and evaluate the , or those persons directly respone and belief, true, accurate, and cluding the possibility of fine and	information submitted. nsible for gathering the complete. I am aware

Date

Jerry Miller



#### DEPARTMENT OF PUBLIC

Watei 141<u>5</u> Kaiamazoo Michigan (61 FAX (61)

April 28, 1994

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

Enclosed please find the most recent sampling results from your facility. If you have any questions, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

Lebecca

Industrial Services Records Specialist

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enc.

INSPECTIONMEETING	PHONE CONVERSATION	OBSERVATION
ame of Facility / chard // Address Contact	iff fandtill	Date 3/10/94 Time 9:00 14
urpose: <u>ANNUAL Ins</u>	spection	
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bservations:		<del></del>
	<u>.</u>	
Curther Action Required:	large name on	Computer
Inspection Lab Data Self-Monitoring/Compliance		
Inspection Lab Data	Signature /	A. Machon

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#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

October 25, 1993

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Re: Mercury Elimination/Minimization Program

Dear Mr. Miller:

Thank you for your cooperation with the Kalamazoo Water Reclamation Plant's program to eliminate mercury from the wastewater system. A review of your file and sampling data indicates that you have successfully eliminated mercury from your facility's discharge.

As a result of your efforts, along with other facilities on the wastewater system, we are experiencing a reduction in the amount of mercury being received into the Kalamazoo Water Reclamation Plant. This is illustrated by the attached graph which depicts the concentrations in the sludge immediately prior to incineration at the plant. As you can see, concentrations have dropped dramatically since the inception of the elimination program in 1991.

Please keep in mind that you are required to continue monitoring the disposal practices at your facility to safeguard against mercury being introduced into the wastewater discharge. Thank you again for working with us to overcome this environmental concern.

Please feel free to call me at 337-8715 if you have any questions.

Sincerely,

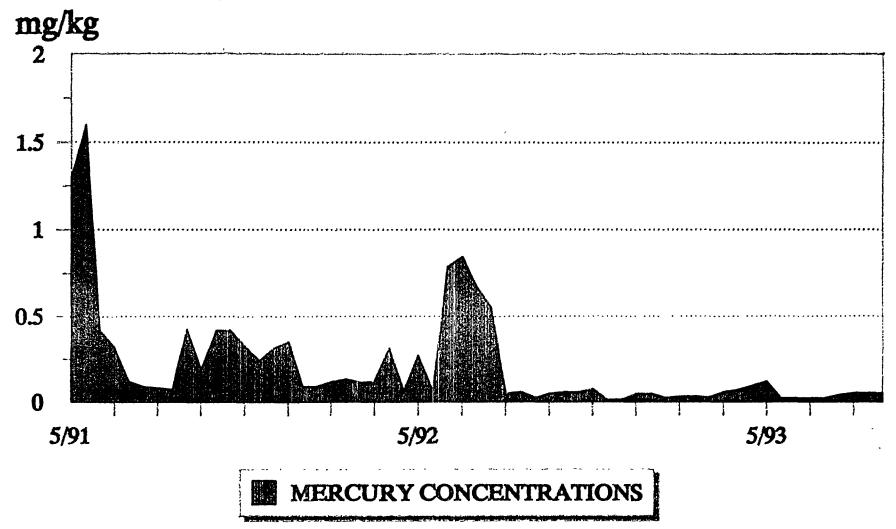
Kent Mottinger,

Kent motter

Industrial Services Supervisor

file

# MERCURY CONCENTRATIONS BELT PRESS CAKE



\*MILLIGRAM/KILOGRAM

\*\* UPDATED: SEPT. 9, 1993



NEW PHONE NUMBERS (616) 337-8157 FAX (616) 337-8699 DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison ka amazoo Michigan 49007-2565 (616) 385-8157

May 14, 1993

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

On September 11, 1993, we sent you a letter regarding proposed substantial modifications to the City of Kalamazoo's Industrial Pretreatment Program. The proposed modifications were submitted to the Michigan Department of Natural Resources (MDNR). The MDNR has approved the modification and plans to publish a public notice in newspapers sometime during the week of May 16-22, 1993. The public will then have 30 calendar days to comment on the proposed modifications. Comments should be addressed to:

Michigan Department of Natural Resources Surface Water Quality Division District 12 Headquarters P.O. Box 355, 621 North Tenth Street Plainwell, Michigan 49080

Phone Number: (616) 685-9886

The proposed modifications being public noticed are as follows:

- 1. Revisions to Chapter 28 of the Kalamazoo City Code of Ordinances, "Wastewater Discharge Regulations and Enforcement Procedures";
- 2. Wastewater Use Regulations and existing Sewer Use Regulations;
- 3. Individual Control Documents (to replace Administrative Orders);
- 4. Revision to the Enforcement Response Plan;
- 5. March 17, 1992 notification of increase in pollutant loadings at the Kalamazoo Water Reclamation Plant.

Following the MDNR's public comment period, any further necessary changes, and final MDNR approval, the proposals will be submitted to the Kalamazoo City Commission and the other jurisdictions served by the Kalamazoo Water Reclamation Plant. There should be additional opportunity for public participation during this stage of the process.

Please feel free to contact us at 337-8157 if you have any questions.

Sincerely,

Kent Mottinger,

Heat Mothinger

Industrial Services Supervisor

c: R. Cinabro, City Attorney





NEW PHONE NUMBERS (616) 337-8157 FAX (616) 337-8699 DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007-2565 (616) 385-8157

April 8, 1993

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

This letter is to remind you of your facility's self-monitoring and reporting requirements under the Industrial Pretreatment Program.

The enclosed forms and instructions have been provided to both assist you in reporting the necessary data and facilitate processing by our office. The forms reflect the self-monitoring requirements for your facility, so it is important that <u>all</u> information requested on the form be provided.

All sampling and flow data should be submitted to our office within 10 days after the end of the reporting period specified on the enclosed forms.

Please remember that if the sampling indicates a violation, you must notify our office within 24 hours.

We ask that you refer any questions to the Industrial Pretreatment Inspector working with your facility. You may also call me at 337-8658.

Thank you for your cooperation.

Lebecca J. Dratuk

Sincerely,

Rebecca J. Gnatuk

**Industrial Services Records Specialist** 

enclosures

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### KALAM 100 WATER RECLAMATI 2 PLANT INDUSTRIAL USER SELF-MONITORING REPORT

1) Facility:	Orchard Hill La 3378 Hennesy	Road				e: July 10, 19	
	Watervliet, MI	49098			(3) Sample I	Point Code: Of	1L,
(4) Location:	Septage Haule Pump Station.	rs Dump Stat	ion at the City of	Kalamazoo W	ater Reclamatio	on Plant west o	f the Raw Sewage
(5) Purpose fo	or Sampling:	☐ Violation	eriodic report. Pe Resampling			e 30, 1993	
(6) Sampling	Method:						
(7) Date and	Time of Compos	site Samples:	Start:		End:		
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(9)			RES	SULTS			
<u>Parameter</u>	<u>Value</u>	<u>Units</u>	Sample Type*	Parameter	Value	<u>Units</u>	Sample Type*
Cadmium, T			·	Mercury, T			•
Chromium, T				Cyanide, T			
Copper, T				рН			·
.ead, T			•	MDNR Scans	s 1 & 2 (Attach	n Results)	
Nickel, T				TCLP (Attacl	h Results)		
Zinc, T				-			·
* Sample Type	s: G = Grab sample	e C = Compos	site Sample				
(10) Name o	f Laboratory				(Att	ach copies of L	aboratory Results)
(11) Flow: A	verage Daily			N	Maximum Daily		
designed who mans and belief	to assure that qualif age the system, or th	ied personnel pro ose persons direc complete, I am	operly gather and eva city responsible for gat	luate the informati thering the informa	on submitted. Be	sed on my inquiry on submitted is, to t	cordance with a system of the person or persons he best of my knowledge cluding the possibility of
Signature:			Title:			Date:	

Mail to:

INDUSTRIAL SERVICES RECORDS SPECIALIST
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

### KALAM :OO WATER RECLAMATIC PLANT INDUSTRIAL USER SELF-MONITORING REPORT

	Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098			(2) Due Date: January 10, 1994 (3) Sample Point Code: OHL			
4) Location:	Septage Haul Pump Station		tion at the City o	f Kalamazoo Wa	ater Reclamati	on Plant west	of the Raw Sewage
5) Purpose f	or Sampling:	□ Violation	periodic report. Po Resampling			per 31, 1994	
6) Sampling	Method:			<u></u>			
(7) Date and	Time of Compo	osite Samples	: Start:		End:		
(8) Date and	Time of Grab S	Samples:					
(9)			RES	SULTS			
<u>Parameter</u>	Value	<u>Units</u>	Sample Type*	Parameter	<u>Value</u>	Units	Sample Type*
Cadmium, T				Mercury, T		. <del></del>	
Chromium, T				Cyanide, T			
Copper, T				рН		_	
ead, T				MDNR Scans	1 & 2 (Attacl	h Results)	
Nickel, T			· · · · · · · · · · · · · · · · · · ·	TCLP (Attach	Results)		
Zinc, T						·	
* Sample Typ	e: G = Grab samp	ole C = Compo	site Sample				
(10) Name o	f Laboratory				(Att	ach copies of	Laboratory Results)
(11) Flow: A	Average Daily_			M	laximum Daily		
designed who mand and belief	to assure that qual age the system, or t	lified personnel p chose persons dire nd complete. I am	roperly gather and eve ectly responsible for ga n aware that there are	luate the information thering the information	on submitted. Ba ion, the information	sed on my inquiry on submitted is, to	ccordance with a system of the person or person the best of my knowledge acluding the possibility o
Cianatura			Title:			Date:	

Mail to:

INDUSTRIAL SERVICES RECORDS SPECIALIST
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565



#### NEW PHONE NUMBERS (616) 337-8157 FAX (616) 337-8699

#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007-2565 (616) 385-8157

March 3, 1993

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

Enclosed please find the most recent sampling results from your facility. If you have any questions, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

**Industrial Services Records Specialist** 

Lebecca J. Dratuk

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enc.

INSPECTIONMEE \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Name of Facility: Orchard Hill Fandfill Date: 2/10/93  Address: Time: 8:15 an
Contact: Jerry Miller Phone: 463 5588
Topic: SMR
Details: left mersage - will return call
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Further Action Required:
File: V General Correspondence Inspection Lab Data Self-Monitoring Self-Monitoring
Self-Monitoring Other
New Industrial User Needs Attention phone call, late data
submitted by

INSPECTIONN _:TINGPHONE CONVERSA _ OBSERVATION
Name of Facility: Orchard Hill Fundfill Date: 1/14/43  Address: Time: 10:15 am  Contact: Jerry Miller  Phone: 1-463-5588
Contact: Jerry Wille
Phone: 15 46.3 5 5588
Phone . The state of the state
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Details: Was over looked - may have  some data or samples from the last  half of 1992
some data or samples from the last
hall a was
- Nay 8/ 1995
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Lab Data Signature: ) unother Mckulen bend
Self-Monitoring Other
New Industrial User  Needs Attention
submitted by



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

October 13, 1992

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

The City of Kalamazoo recently received a request under the Freedom of Information Act (FOIA) for "...analyses of PCBs in samples of effluent from industries which discharge to the Water Reclamation Plant". In compliance with the FOIA, we provided the results of all PCB analyses performed on the wastewater discharges of all non-domestic users of the Kalamazoo Water Reclamation Plant, including your facility. The data was sent to the requester on October 12, 1992.

The name and address of the requesting person is:

Mark P. Brown, Ph.D. Blasland & Bouck Engineers, P.C. 6723 Towpath Road, Box 66 Syracuse, New York 13214

Please feel free to call me at 337-8715 if you have any questions.

Sincerely,

Heat Mottinger

Kent Mottinger Industrial Services Supervisor

c:

- R. Cinabro
- R. Amundson
- B. Merchant

Name of	Facility_	Orcheral A	L;   S	Land fill		_ Date Time	e 5/11/92 e 8:50 An
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Purpose	:Tc	CLP Self-	Monito	ring .	<del></del>		
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#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007-2565 [616] 337-8699 FAX (616) 337-8699

May 6, 1992

Certified Mail #P 242 167 621

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI

Dear Mr. Miller:

Enclosed please find the necessary forms for the self-monitoring required of your facility in 1992.

Please note that <u>each</u> of the parameters listed on the form must be analyzed and reported in order to fulfill the requirements for your facility. Also, average daily and maximum daily flows must be calculated using flow information covering the entire reporting period for your facility.

Please continue to be aware that if your sampling indicates a violation, you must notify our office within 24 hours of becoming aware of the violation.

Any late or incomplete reports will place your facility in noncompliance, and escalated enforcement action may be necessary.

In the event that the self-monitoring requirements for your facility need to be altered, we will inform you of the appropriate changes in as timely a manner as possible.

Thank you for your cooperation in this matter. If you have any questions regarding this letter or the requirements placed upon your facility, please contact me at 337-8658.

Sincerely,

Rebecca J. Gnatuk

Industrial Services Records Specialist

Kelucia J. Druteck

c: file

### KALAMAZOO WATER RECLAMATION PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility:	Orchard Hill La 3378 Hennesy	y Road				e: July 10, 19	
	Watervliet, M				(3) Sample	Point Code: Ol	1L
(4) Location:	Septage Haule Pump Station.	-	tion at the City o	f Kalamazoo W	ater Reclamatio	on Plant west o	of the Raw Sewage
(5) Purpose fo	or Sampling:	□ Violation	periodic report. Po Resampling	-		e 30, 1992	
(6) Sampling	Method:					· · · · · · · · · · · · · · · · · · ·	
(7) Date and <sup>1</sup>	Fime of Compo	site Samples:	: Start:		End:		
(8) Date and	Time of Grab S	amples:			<del></del>		
(9)			RES	SULTS			
<u>Parameter</u>	Value	Units	Sample Type*	Parameter	Value	Units	Sample Type*
Cadmium, T				Mercury, T			
Chromium, T		<del></del>	***************************************	Cyanide, T			•••-
Copper, T		***************************************	***************************************	pН			
_ead, T				MDNR Scans	s 1 & 2 (Attach	n Results)	
Nickel, T			***************************************	TCLP (Attacl	n Results)		
Zinc, T			******************************	РСВ, Т			**************************************
* Sample Type	: G = Grab sampl	e C = Compos	site Sample				
(10) Name of	Laboratory				(Att	ach copies of L	aboratory Results)
(11) Flow: A	verage Daily			M	laximum Daily		
designed t who mane and belief,	o assure that quali ge the system, or th	fied personnel pr nose persons dire d complete. I am	operly gather and eva ctly responsible for ga a aware that there are	luate the informati thering the informat	on submitted. Bastion, the information	sed on my inquiry on submitted is, to t	cordance with a syster of the person or person ne best of my knowledg cluding the possibility o
Signatura			Title			Date:	

Mail to:

INDUSTRIAL SERVICES RECORDS SPECIALIST
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

### KALAMAZOO WATER RECLAMATION PLANT

INDUSTRIAL USER SELF-MONITORING REPORT (1) Facility: Orchard Hill Landfill (2) Due Date: January 10, 1993 3378 Hennesy Road Watervliet, MI (3) Sample Point Code: OHL (4) Location: Septage Haulers Dump Station at the City of Kalamazoo Water Reclamation Plant west of the Raw Sewage Pump Station. ✓ Routine periodic report. Period: July 1, 1992 - December 31, 1992 (5) Purpose for Sampling: □ Violation Resampling ☐ Other: (6) Sampling Method: (7) Date and Time of Composite Samples: Start:\_\_\_\_\_\_ End:\_\_\_\_\_ End:\_\_\_\_\_ (8) Date and Time of Grab Samples: **RESULTS** (9) Parameter Value <u>Units</u> Sample Type\* Parameter Value Units Sample Type\* Cadmium, T Mercury, T Chromium, T Cyanide, T Copper, T pΗ Lead, T MDNR Scans 1 & 2 (Attach Results) Nickel, T PCB, T Zinc, T \* Sample Type: G = Grab sample C = Composite Sample (10) Name of Laboratory\_\_\_\_\_ (Attach copies of Laboratory Results) Maximum Daily\_\_\_\_\_ (11) Flow: Average Daily (12) I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Title: Signature:

Mail to:

INDUSTRIAL SERVICES RECORDS SPECIALIST Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, MI 49007-2565

THE CITY OF



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157 FAX (616) 337-8699

Certified Mail #P 068 104 669

May 1, 1992

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

Enclosed please find an Administrative Order that has recently been issued to Orchard Hill Landfill. This order is the main document used by the City of Kalamazoo Department of Public Utilities to adequately control and regulate what is discharged by your facility to the Kalamazoo Water Reclamation Plant. Please read this Order and all referenced documents carefully and thoroughly. Compliance with this Order is a necessary condition of receiving wastewater service. Also enclosed are copies of the City of Kalamazoo Sewer Use Ordinance and Sewer Use Regulations #1-89 and #91-1. These documents detail additional specific discharge requirements and regulations (see especially Section 28-10 of the Ordinance for a list of prohibited discharges) and are referenced in the Order.

Please note that a requirement to perform Toxic Characteristic Leaching Potential (TCLP) testing has been added to your self-monitoring requirements.

Please call me at 337-8715 if you have any questions regarding this letter or the enclosed documents.

Sincerely,

Kent Mottinger

**Industrial Services Supervisor** 

KM:rjg\ipp\ao\ohl

c: A. Blatchford B. Merchant file

### CITY OF KALAMAZOO WASTEWATER SERVICE

#### ADMINISTRATIVE ORDER

User Name: Orchard Hill Landfill Address: 3378 Hennesy Road

Watervliet, MI 49098

Phone: 616-375-9595 Contact Person: Mr. Jerry Miller

Date of Reissue: Mr. Jerry Mille
Mr. Jerry Mille
May 1, 1992
May 1, 1993

#### **Discharge Standards:**

Specific limits on pollutants discharged to the sanitary sewer are presented in Attachment A.

#### **Compliance Schedule:**

As required, areas of non-compliance shall be resolved on the specified timetable indicated in Attachment B.

#### Monitoring and Reporting:

User shall install and maintain necessary monitoring systems and pretreatment equipment. User shall perform any required waste stream sampling and analyses. Self-monitoring reports may also be required. Specifics for each of these items are given in Attachment C.

Notification of Process Changes: Notification must be given to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process changes that may substantially affect wastewater flow or quality. Process changes are defined as major plant expansions or modifications, which result in the discharge of new pollutants or the introduction of higher quantities of existing pollutants. All process changes that could significantly increase flow or significantly lower wastewater quality must be approved by the Department of Public Utilities prior to implementation.

Notification of Slug Discharges: Immediate notification must be given to the Department of Public Utilities of any spills, slug loads or upsets in pretreatment processes that affect wastewater discharge to the sanitary sewer. You must monitor your processes and activities to assure prompt detection of any problems. The telephone number to call is 337-8157, day or night. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted to the Industrial Services Supervisor within three (3) working days following the event. The reporting address is the Kalamazoo Water Reclamation Plant, 1415 N. Harrison Street, Kalamazoo, MI 49007-2565.

Administrative Order May 1, 1992 Page 2.

Notification of Violations: If sampling performed by the User indicates a violation of any local, state or federal discharge limitations, the User must notify the Industrial Services Supervisor at the City of Kalamazoo Department of Public Utilities within 24 hours of becoming aware of the violation. The User must also repeat the sampling and analysis, and submit the results from this repeat analysis to the Industrial Services Supervisor within 30 days after becoming aware of the violation.

#### Monitoring Authority:

User shall allow access by authorized Utilities Department staff members 1) at all reasonable times whether or not discharge is occurring, and 2) at any time when there is reason to believe a discharge or violation is occurring, for inspecting all operations and records, copying records, and observing and sampling wastewater discharges.

#### General:

This Order applies only to the aforementioned identified User and shall not be transferred to another User.

The User is required to retain all records pertaining to its wastewater discharge for a minimum of three (3) years.

This Order does not relieve the User of its obligations under any local, state, or Federal statues, ordinances, rules, or regulations. Additional local requirements pertaining to wastewater discharge can be found in the City of Kalamazoo Code of Ordinances (Chapter 28), and in any associated Sewer Use Regulations. If the User is not located in the City of Kalamazoo, reference should also be made to the ordinance of the municipality in which the User is located.

This Order, or any part thereof, is subject to change at the sole discretion of the City of Kalamazoo.

Violation of this Order or governing ordinances, statues, rules or regulations may cause the User's name and address to be published in a local newspaper, in accordance with procedures outlined in applicable Federal regulations.

Spill Prevention: The User shall install any equipment or devices necessary to prevent any spillage or leakage of process solutions or chemicals from entering the sanitary sewer. Additionally, the User shall store bulk chemicals and toxic wastes in such a manner as to prevent any accidental discharge to the sanitary sewer in the event of a spill.

Administrative Order May 1, 1992 Page 3.

Termination of Service: The Department of Public Utilities can take immediate action to terminate service and/or halt discharges if the User's discharge poses a significant threat to the City's wastewater collection or treatment system, the environment, or human health or welfare.

Liability: The User is liable for all damage which its discharge does to the City of Kalamazoo's wastewater collection or treatment system if that damage is caused by a violation of this Order or any applicable statue, ordinance, regulation or rule.

Compliance with this Order is a necessary condition of receiving wastewater service.

The City of Kalamazoo may act through its Department of Public Utilities or such other department or persons as the City in its sole discretion deems appropriate.

Rave Muniley

Bruce Minsley

Acting Director of Public Utilities

### CITY OF KALAMAZOO WASTEWATER SERVICE

#### **ADMINISTRATIVE ORDER**

#### ATTACHMENT "A": DISCHARGE LIMITATIONS

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road

Watervliet, MI 49098

**Contact Person:** 

Mr. Jerry Miller

Date of Issue:

May 1, 1992

Date of Reissue:

May 1, 1993

#### I. Local Discharge "End-of-Pipe" Limitations:

These limitations apply to all wastewater discharge(s) from your facility to the sanitary sewer. Please refer to Attachment "C" for the specific "end-of-pipe" sample location(s), and to the City of Kalamazoo Sewer Use Ordinance, Chapter 28, Section 28-10 (or applicable ordinance of the municipality where the facility is located) for general prohibited discharge limitations.

POLLUTANT		DAILY MAXIMUM CONCENTRATION LIMIT <u>MILLIGRAMS PER LITER (mg/L)</u>
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Total PCB		prohibited discharge
Mercury	(Hg)	prohibited discharge
рН		6.2 - 9.8 S.U.

#### II. Hazardous Wastes:

Any material that is classified as a hazardous waste by either listing or characteristic as defined in 40 CFR 261.3 may not be disposed of at the Kalamazoo Water Reclamation Plant.

### CITY OF KALAMAZOO WASTEWATER SERVICE

#### **ADMINISTRATIVE ORDER**

ATTACHMENT "B": COMPLIANCE SCHEDULE

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road

Watervliet, MI 49098

**Contact Person:** 

Mr. Jerry Miller

Date of Issue:

May 1, 1992

Date of Reissue:

May 1, 1993

#### PRETREATMENT COMPLIANCE SCHEDULE:

(RESERVED)

## CITY OF KALAMAZOO WASTEWATER SERVICE ADMINISTRATIVE ORDER

#### ATTACHMENT "C": MONITORING REQUIREMENTS

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road

Watervliet, MI 49098

**Contact Person:** 

Mr. Jerry Miller

Date of Issue:

May 1, 1992

Date of Reissue:

May 1, 1993

#### I. Sample Location:

A. Holding tank at the end of the pretreatment system (self-monitoring location).

B. Septage Hauler Dump Station at the City of Kalamazoo Water Reclamation Plant west of the Raw Sewage Pump Station (Compliance monitoring location).

#### II. Monitoring and Reporting: Requirements and Frequency

<u>Monitoring Facilities</u>: User shall maintain necessary flow monitoring equipment. User may also be required, at the discretion of the City of Kalamazoo, Department of Public Utilities, to install and maintain automatic sampling equipment.

<u>Self-Monitoring</u>: User shall perform the following sampling and analyses: An adequate number of samples shall be collected to ensure that the discharge does not violate limitations set forth in this Administrative Order. As a minimum, one (1) sample shall be collected during the months of June and December and analyzed for all the regulated pollutants listed in Attachment A plus MDNR Scans 1 & 2. Additionally, during the month of June a Toxic Characteristic Leaching Potential (TCLP) test must be performed. All samples must be representative of the waste discharge to the Kalamazoo Water Reclamation Plant. All sampling and analyses shall be conducted according to EPA-approved methods (see: 40 CFR Parts 136 and 403). Additional sampling and parameters may be required by the City of Kalamazoo at any time.

Reporting Requirements: User shall fulfill the following reporting requirements:

<u>Self-Monitoring Reports</u>: Self-Monitoring reports shall be submitted semi-annually. Semi-annual reports shall be due on the tenth day of the months of July and January. The first Semi-annual report shall be due July 10, 1992.

#### At a minimum the reports shall contain:

- a) The total and daily average volume of waste delivered.
- b) Results of all sampling performed by User.

## INTER-OFFICE**MEMO**

To: Abbie Walker

From: Kent Mottinger  $\chi m$ .

Date: January 28, 1992

Subject Orchard Hills Landfill

The waste hauler for Orchard Hills Landfill (Balkema!s) has purchased a new truck for bringing leachate to the Kalamazoo Water Reclamation Plant. The new truck has less capacity than their previous one. We have weighed the truck fully loaded on 14 occasions and found that the average load is 8300 gallons, which is exactly its rated capacity.

Mr. Jerry Miller of Orchard Hills has agreed to be billed based on 8300 gallons per load. Please use 8300 gallons per load until further notice. Also, please use the 8300 gallon average to adjust all billing back to January 7, 1992.

Please feel free to call me at 8157.

#### ORCHARD HILL SANITARY LANDFILL

3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

January 6, 1992

Mr. Tim Meulenberg Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, MI 49007-2565

SUBJECT: Mercury Detected in Samples

Dear Sir:

During our regular sampling done in July Mercury was detected. We did follow up sampling after we were notified of the problem. The two samples dated, 11/20/91 and 12/10/91 are inclosed. Mercury was not detected in those two samples.

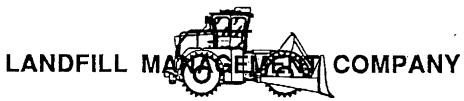
During July, our plant was in the process of being moved and expanded. We had to go through a shakedown period and did experience some operational problems related to the move to the new building. These problems have been corrected and closer attention is being paid to things such as chemical feed rates and flow through the plant.

Additional samples will be taken and submitted to you as results become available. Samples will be taken during the first week of the month for the next three months. At the end of this period we will go over the results with you. If an elevated parameter is discovered we will contact your office within 24 hours.

Please let me know if additional information is needed.

Respectfully,

Jerome Miller



#### ORCHARD HILL SANITARY LANDFILL

3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

TO:	KALAMAZEO WATER Reclaimation
ATTN:	Kent Mittinger
FROM:	trul Millau
FAX NUMBE	R
NUMBER OF	PAGES FOLLOWING THIS COVER SHEET
SENT BY	1/M TIME // 55 DATE 2/4/92

FAX NUMBER 616-463-7133



ORCHARD HILL SANITARY LANDFILL 3290 HENNESEY ROAD . PHONE (616) 463-5588 . WATERVLIET, MICHIGAN 49098

DEAR MR KENT MITTINGER:

FEB 4,1992

ENCLOSED ARE SOME OF THE LOADS WE WEIGHED AND REWEIGHED AT THE SCHUPAN FACILITY.

THE DATA SEEMS TO INDICATE THAT USING YOUR NUMBERS AND THROWING OUT THE ONES THAT WEIGHED IN EXCESS OF THE TRUCK'S CAPACITY THAT WE COULD USE 8200 GALLONS PER LOAD AND BE VERY CLOSE.

PLEASE ADVISE WITH YOUR DECISION. I AM INCLUDING THE SCHUPAN WEIGH TICKETS BUT THE DRIVERS DID NOT WEIGHT ON THEIR RETURN TRIPS EVERY TIME.

Page 1

#### WASTEWATER LOADS TO KALAMAZOO

LOAD #	DATE	GALLONS
8,055	1/20	8,375
8,059	1/20	8,118
8,074	1/22	8,377
8,081	1/23	7.994
8,080	1/23	8,395
8,085	1/24	8,039
8,098	1/27	7,944
8,100	1/28	8,044
8.109	1/29	8,365
8,111	1/29	8,340
8,121	1/31	8,121
8,132	2/3	8.182
8,135	2/4	8,213

8,193

AVERAGE

M2 003036

## CITY OF KALAMAZOO

# WATER RECLAMATION PLANT

1). HAULING COMPANY INFORMATION:	Name	<u> </u>
	Address	
		State
	Zip Code	
		. //
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	Address	
Type of waste: (Circle one)	City	State
	Zip Code	
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AXLE WTS	CARRIER	3055
	TRICTOR	TRAILER
1-50-35 In: ZaHu(1	10020 101ALS 500	
	LBS. GROSS	ı
1 - 20 - 9일 조인 (27심점 ) :	143661	•
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ONS: WET DRY RAINING	Name	
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Type of waste: (Circle one)	NameAddress	State
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Type of waste: (Circle one)  Household or Nonhousehold  DISCHARGE INFORMATION	NameAddress	(KGs)
Type of waste: (Circle one)  Household or Nonhousehold  DISCHARGE INFORMATION	Name Address City Zip Code  Full Weight Empty Weight TOTAL WEIGHT RECEIVED	(KGs) (KGs) (KGs)
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ORCHARD HILL

+→→ KAL. WASTE WATER 2005/008

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DATE //	27/92					Nº	003074
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CITY OF KALAMAZOO
WATER RECLAMATION PLANT

HAULED WAST	E TRACKING AND DIS	CHARGE TICKET
1). HAULING COMPANY INFORMATION		
		State
	Zip Code	
2). ORIGIN OF MATERIAL:		120 411 Lituration
	Address	State_
	CILY	State
	SCHUPAN & SONS INC. 2619 MILLER RD., P.O. BO KALAMAZOO, MI 49003 616-382-0000	PROCESSORS & BROKERS
CUSTOMERS NAME		
ADDRESS		
COMMODITY		
COMMODITYREMARKS	то	
REMARKS		
1-22-92 4100		11-27 TRAILER 568
4	100	S. GROSS
1-22-92 4:00	FM 49386	. GHOSS
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1-88-98 कर्छ।	First the transfer	NET in
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VEATHER /		ORIVER
CONDITIONS WET DRY	RAINING SNOW	· V
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	Name	
Type of waste: (Circle one)	Address	Staro
Type of waste. (Officie offe)	-	State
Household or Nonhousehold	<u> </u>	
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and/or authorized KWRP personnel. HAULING COMPANY REPRESENTATIVE	· · · · · · · · · · · · · · · · · · ·	DATE <u>- / 722 / 1</u> 2
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KWRP REPRESE		DATE
	FOR OFFICE USE ONLY	8377 gallo-
GALLONS	. /) /	43/1 gar
DATE ENTERED	( ' ,	Form 1114 2-17-89

GALLONS \_

DATE ENTERED \_\_

NO 003030

## CITY OF KALAMAZOO

WATER RECLAMATION PLANT HAULED WASTE TRACKING AND DISCHARGE TICKET 1). HAULING COMPANY INFORMATION: Name Address City \_ Zip Code ECHARA Name 2). ORIGIN OF MATERIAL: Address\_ City \_ Type of waste: (Circle one) SCHUPAN & SONS INC. 2619 MILLER RD., P.O. BOX 2408 SCRAP METAL KALAMAZOO, MI 49003 616-382-0000 **ADDRESS** COMMODITY. REMARKS . TRACTOR LBS. GROSS LBS, TARE-DRIVER ON 4 5 G E (i) 沙司:在对科科 \_\_ PER LB. PRICE \_ ES अध्यहास 13213213 WEATHER CONDITIONS: ☐ WET ☐ DRY **APAINING** ☐ SNOW Type of waste: (Circle one) City \_ Zip Code Household or Nonhousehold (KGs) 4/9 5 TOTAL WEIGHT RECEIVED All waste hereby discharged to the Kalamazoo Water Reclamation Plant is nonhazardous and all the above information is accurate and inclusive. Furthermore, I have been informed of the consequences and liabilities associated with the illegal discharge of HAZARDOUS WASTE into the Kalamazoo Water Reclamation Plant by my supervisor and/or authorized KWRP personnel. HAULING COMPANY REPRESENTATIVE KWRP REPRESENTATIVE\_ FOR OFFICE USE ONLY

DATE /- 29 - 92

N2 003109

HAULED WASTE TF  1), HAULING COMPANY INFORMATION:	Name	
ix indenta com an an ampanon	Address	
	City	State
	Zip Code	
2). ORIGIN OF MATERIAL:	Name	
		Charles
Type of waste: (Circle one)		StateState
<u>5</u> 001823	SCHUPAN & SONS INC. 2619 MILLER RD., P.O. BO KALAMAZOO, MI 49003 616-382-0000	OX 2408 SCRAP METAL PROCESSORS & BROKERS
CUSTOMERS NAME		taid 500
ADDRESS		ε.
COMMODITY	TO	
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	110200	TRAICEH
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STATE OF MICHIGAN CERTIFIED SCALES		. 5.1 (8.1 11102
WEATHER (/		DRIVER
CONDITIONS: WET DRY   RAINI	NG SNOW	WEIGHER
Tupo of waste: (Cirola ana)	Address	
Type of waste: (Circle one)	Address	State
Type of waste: (Circle one)  Household or Nonhousehold	Address	
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FOR OFFICE USE ONLY

GALLONS \_\_\_\_\_ DATE ENTERED \_\_\_\_\_

02/04/92 12:00 ☎616 '°37133 ORCHARD HILL →→→ KAL. WASTE WATER Ø 008/008 Nº 008121 DATE CITY OF KALAMAZOO WATER RECLAMATION PLANT HAULED WASTE TRACKING AND DISCHARGE TICKET 1) HAULING COMPANY INFORMATION: Name Address City Zip Code 2). ORIGIN OF MATERIAL: Type of waste: (Circle one) City \_\_\_\_\_ ZIp Code Household or Nonhousehold 001759 SCHUPAN & SONS INC. SCRAP METAL 2619 MILLER RD., P.O. BOX 2408 PROCESSORS & BROKERS KALAMAZOO, MI 49003 616-382-0000 CUSTOMERS NAME \_\_\_\_\_ ADDRESS COMMODITY \_\_\_\_\_ TO \_\_\_\_ CARRIER REMARKS .\_ TRACTOR 2153PM 0092801 LBS. GROSS 41080 **전역인근 1 등** 1-31-92 LBS, TARE-DRIVER ON \_ PER LB. PRICE \_ LBS. NET @ \_\_\_ STATE OF MICHIGAN CERTIFIED SCALES DRIVER WEATHER RAINING ☐ SNOW ORY CONDITIONS: Zip Code \_\_ Household or Nonhousehold 3). DISCHARGE INFORMATION 12170 Empty Weight \_

TOTAL WEIGHT RECEIVED

All waste hereby discharged to the Kalamazoo Water Reclamation Plant is nonhazardous and all the above information is accurate and inclusive. Furthermore, I have been informed of the consequences and liabilities associated with the Illegal discharge of HAZARDOUS WASTE into the Kalamazoo Water Reclamation Plant by my supervisor and/or authorized KWRP personnel.

HAULING COMPANY REPRESENTATIVE

KWRP REPRESENTATIVE\_

FOR OFFICE USE ONLY

**GALLONS** DATE ENTERED\_\_\_\_

8121.37

Form 1114 2-17-89



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 385-8157

August 27, 1991

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI

Dear Mr. Miller:

This is to inform you of a change in your facility's reporting requirements under the Industrial Pretreatment Program. Under normal circumstances, this information would be handled in the control document issued to your facility (presently called an "Administrative Order"), however, due to the time frame involved it is being dealt with in this letter. The control documents for all of our Significant Industrial Users are in the process of being amended and will be forthcoming.

According to Federal regulations, all Significant Industrial Users must submit a Self-Monitoring Report at least once each six months which includes a description of the nature, concentration, and flow of pollutants. Prior to July 1, 1991 the City of Kalamazoo performed the sampling and analyses necessary to meet this Federal requirement. Kalamazoo's Industrial Pretreatment Program has been formally modified to place the responsibility for the Self-Monitoring Reporting requirements on the User. Kalamazoo will still be conducting extensive sampling, but for verification purposes, enforcement, and expansion of the program.

The enclosed form and instructions for its use have been provided to assist you in collecting the information necessary for the report. This will also help our office in processing the data.

We ask that you refer your questions to the Industrial Pretreatment Inspector who has been working with your facility. If further assistance is required, please call Rebecca Gnatuk at 337-8658 or me at 337-8715.

Thank you for your cooperation in these matters.

Sincerely,

Kent Mottinger

Industrial Services Supervisor

KM:rjg/ipp/km/self mon

Kint Motting

c: B. Merchant

file

## KALAMATIO" PLANT INDUS. RIAL USER SELF-MONITORING REPORT

(1) Facility: Orchard Hill La 3378 Hennes Watervliet, Mi	y Road				: January 10,	
(4) Location: Septage Haule Pump Station.		on at the City of	Kalamazoo Wa	ter Reclamatio	n Plant west o	f the Raw Sewage
(5) Purpose for Sampling:	☐ Violation	eriodic report. F Resampling			<u>per 31, 1991</u>	
(6) Sampling Method:						
(7) Date and Time of Compo	site Samples:	Start:		End:		
(8) Date and Time of Grab S	amples:					
(9)		RES	SULTS			
Parameter Value	<u>Units</u>	Sample Type*	Parameter	Value	<u>Units</u>	Sample Type*
Cadmium, T			Mercury, T		<del></del>	
Chromium, T			Cyanide, T			****
Copper, T			рH			
Lead, T		<del></del>	РСВ, Т			
Nickel, T			***************************************			
Zinc, T						•
* Sample Type: G = Grab sample	e C = Composit	te Sample				
(10) Name of Laboratory				(Atta	ch copies of L	aboratory Results)
(11) Flow: Average Daily			Ma	aximum Daily_		
(12) I certify under penalty of law designed to assure that qualit who manage the system, or th and belief, true, accurate, and fine and imprisonment for kno	ied personnel pro ose persons direct   complete.   am a	perly gather and eva tly responsible for gat	luate the informatio thering the information	n submitted. Bas on, the information	ed on my inquiry o submitted is, to th	of the person or persons ne best of my knowledge
Signature:		Title:			Date:	

Mail to:

INDUSTRIAL PRETREATMENT COORDINATOR
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

### Directions for Industrial User Self-Monitoring Report Form

These directions are being provided to assist you in the preparation of Self-Monitoring Reports submitted to the City of Kalamazoo Water Reclamation Plant (KWRP) for the purpose of complying with the requirements detailed in 40 CFR 403.12 and the control document issued to your facility by KWRP.

#### Item by Item Instructions:

- 1. Name and address of the company.
- 2. The date the report is due to KWRP. Over-due reports are considered violations.
- 3. This is a three digit code assigned by KWRP to identify the specific sampling point.
- 4. The description of the location of the specific sample point.
- 5. Purpose for sampling. Check the appropriate box. If it is a routine periodic report specify the reporting period. Example: July December, 1991. If it is a violation resample, make sure the violation has been reported to KWRP, Industrial Services Section.
- 6. Sampling method. Describe how the sample was collected. Example: "Composite samples collected with automatic sampler, grab samples with bottle on a string."
  - Composite samples are to be collected for all parameters except for certain parameters which must be grab sampled. These exceptions include: pH, Cyanide, Grease and Oil, and volitile organics. The composite samples must be representative of the discharge for a 24 hour period. The composite samples must consist of a minimum of four discrete aliquots collected evenly throughout the operating day.
- 7. Date and Time of Composite Samples. The "start" time is the time when the first aliquot was collected. The "end" time is when the last aliquot was collected.
- 8. Date and Time of Grab Samples. Record when the grab samples were collected.
- 9. Results. Enter the analytical result for the various tests, the units of measurement, and sample type (grab or composite).
- 10. Name of Laboratory. If a commercial laboratory was used, enter its name here. Attach a copy of the report the lab provided you.
- 11. Flow. Enter the average daily flow for the period covered by this report. Also, enter the maximum daily flow which occurred during the period.
- 12. Signatory Requirements. The report must be signed by a responsible corporate officer, general partner, proprietor, or duly authorized representative. A "duly authorized representative" can only sign if a written authorization has been submitted to KWRP. See 40 CFR Part 403.12 (I) for further details.

#### Page 2 of 2

#### Mailing

Address the report to:

Industrial Pretreatment Coordinator

City of Kalamazoo Water Reclamation Plant

1415 North Harrison

Kalamazoo, MI 49007-2565

#### Discharge Violations

If sampling indicates a violation, the facility must notify Industrial Services at KWRP within 24 hours of becoming aware of the violation. Within 30 days the sampling and analysis must be repeated for the parameters in violation and the results submitted to KWRP. More than one sample of the parameter(s) in violation may be required. Contact the Industrial Pretreatment Coordinator for the specific resampling requirements for your facility.

#### **KWRP Contacts**

Industrial Pretreatment Coordinator

337-8658

KWRP General Number

337-8157

You may also contact the Industrial Pretreatment Inspector who has been involved with your facility.

#### RECOMMENDED COMMERCIAL LABORATORIES

KAR Laboratories, Incorporated 4425 Manchester Avenue Kalamazoo, MI 49001

Phone: 616-381-9666 Contact: William Bouma, PH.D.

FECL (Fire & Environmental Consulting Laboratories), Inc.

One East Complex
1451 East Lansing Drive
Suite 222
East Lansing, MI 48823

Phone: 517-332-0167 Contact: Michael G. Goergen

EDI Engineering & Science 611 Cascade West Parkway, SE Grand Rapids, MI 49506-2179

Phone: 616-942-9600 Contact: John P. Dullaghan, Manager

Canton Analytical Laboratory, Inc. 153 Elder Street Ypsilanti, MI 48197

Phone: 313-483-7430 Contact: Ron Yahr, General Manager

> Prein & Newhoff Laboratory 3000 E. Beltline, N.E. Grand Rapids, MI 49505

Phone: 616-364-8491 Contact: Jane Hoch, Lab Director



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007-2565 (616) 385-8157 FAX (616) 385-3015

May 3, 1991

Certified Mail #P 430 809 561

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Re: Administrative Order dated May 3, 1991

Dear Mr. Miller:

Enclosed please find an Administrative Order that has recently been issued to Orchard Hill Landfill. This order is the main document used by the City of Kalamazoo Department of Public Utilities to adequately control and regulate what is discharged by your facility to the Kalamazoo Water Reclamation Plant. Please read this Order and all referenced documents carefully and thoroughly. Compliance with this Order is a necessary condition of receiving wastewater service. Also enclosed are copies of the City of Kalamazoo Sewer Use Ordinance and Sewer Use Regulations #1-89 and #91-1. These documents detail additional specific discharge requirements and regulations (see especially Section 28-10 of the Ordinance for a list of prohibited discharges) and are referenced in the Order.

Please call me at 385-8157 if you have any questions regarding this letter or the enclosed documents.

Sincerely,

Bruce E. Merchant

Technical Services Manager

BEM/rjg enclosures

c: R. Amundson

0. Loen

A. Blatchford

file

## ADMINISTRATIVE ORDER

User Name: Orchard Hill Landfill

Address: 3378 Hennesy Road

Watervliet, Michigan 49098

Phone: (616) 463-5588
Contact Person: Mr. Jerry Miller

Date of Issue: May 3, 1991 Date of Reissue: May 3, 1992

#### **Discharge Standards:**

Specific limits on pollutants discharged to the sanitary sewer are presented in Attachment A.

#### Compliance Schedule:

As required, areas of non-compliance shall be resolved on the specified timetable indicated in **Attachment B**.

#### Monitoring and Reporting:

User shall install and maintain necessary monitoring systems and pretreatment equipment. User shall perform any required waste stream sampling and analyses. Self-monitoring reports may also be required. Specifics for each of these items are given in Attachment C.

Notification of Process Changes: Notification must be given to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process changes that may substantially affect wastewater flow or quality. Process changes are defined as major plant expansions or modifications, which result in the discharge of new pollutants or the introduction of higher quantities of existing pollutants. All process changes that could significantly increase flow or significantly lower wastewater quality must be approved by the Department of Public Utilities prior to implementation.

Notification of Slug Discharges: Immediate notification must be given to the Department of Public Utilities of any spills, slug loads or upsets in pretreatment processes that affect wastewater discharge to the sanitary sewer. You must monitor your processes and activities to assure prompt detection of any problems. The telephone number to call is 385-8157, day or night. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted to the Industrial Services Supervisor within three (3) working days following the event. The reporting address is the Kalamazoo Water Reclamation Plant, 1415 N. Harrison Street, Kalamazoo, MI 49007.

Administrative Order May 3, 1991 Page 2.

Notification of Violations: If sampling performed by the User indicates a violation of any local, state or federal discharge limitations, the User must notify the Industrial Services Supervisor at the City of Kalamazoo Department of Public Utilities within 24 hours of becoming aware of the violation. The User must also repeat the sampling and analysis, and submit the results from this repeat analysis to the Industrial Services Supervisor within 30 days after becoming aware of the violation.

#### Monitoring Authority:

User shall allow access by authorized Utilities Department staff members 1) at all reasonable times whether or not discharge is occurring, and 2) at any time when there is reason to believe a discharge or violation is occurring, for inspecting all operations and records, copying records, and observing and sampling wastewater discharges.

#### General:

This Order applies only to the aforementioned identified User and shall not be transferred to another User.

The User is required to retain all records pertaining to its wastewater discharge for a minimum of three (3) years.

This Order does not relieve the User of its obligations under any local, state, or Federal statues, ordinances, rules, or regulations. Additional local requirements pertaining to wastewater discharge can be found in the City of Kalamazoo Code of Ordinances (Chapter 28), and in any associated Sewer Use Regulations. If the User is not located in the City of Kalamazoo, reference should also be made to the ordinance of the municipality in which the User is located.

This Order, or any part thereof, is subject to change at the sole discretion of the City of Kalamazoo.

Violation of this Order or governing ordinances, statues, rules or regulations may cause the User's name and address to be published in a local newspaper, in accordance with procedures outlined in applicable Federal regulations.

**Spill Prevention:** The User shall install any equipment or devices necessary to prevent any spillage or leakage of process solutions or chemicals from entering the sanitary sewer. Additionally, the User shall store bulk chemicals and toxic wastes in such a manner as to prevent any accidental discharge to the sanitary sewer in the event of a spill.

Administrative Order May 3, 1991 Page 3.

Termination of Service: The Department of Public Utilities can take immediate action to terminate service and/or halt discharges if the User's discharge poses a significant threat to the City's wastewater collection or treatment system, the environment, or human health or welfare.

Liability: The User is liable for all damage which its discharge does to the City of Kalamazoo's wastewater collection or treatment system if that damage is caused by a violation of this Order or any applicable statue, ordinance, regulation or rule.

Compliance with this Order is a necessary condition of receiving wastewater service.

The City of Kalamazoo may act through its Department of Public Utilities or such other department or persons as the City in its sole discretion deems appropriate.

Orlin K. Loen, P.E.

Director of Public Utilities

aslin K. John

#### ADMINISTRATIVE ORDER

### ATTACHMENT "A": DISCHARGE LIMITATIONS

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road

Watervliet, Michigan 49098

Contact Person:

Mr. Jerry Miller

Date of Issue:

May 3, 1991 Date of Reissue: May 3, 1992

#### I. Local Discharge "End-of-Pipe" Limitations:

These limitations apply to all wastewater discharge(s) from your facility to the sanitary sewer. Please refer to Attachment C for the specific "end-of-pipe" sample location(s), and to the City of Kalamazoo Sewer Use Ordinance, Chapter 28, Section 28-10 (or applicable ordinance of the municipality where the facility is located) for general prohibited discharge limitations.

		DAILY MAXIMUM CONCENTRATION LIMIT
POLLUTANT		MILLIGRAMS PER LITER (mg/L)
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Total PCB		prohibited discharge
Mercury		prohibited discharge

## II. Process-specific Discharge Limitations:

These limitations apply to all regulated process discharge(s) within the facility. Please refer to Attachment C for specific "end-ofprocess" sample location(s).

(Not Applicable)

## ADMINISTRATIVE ORDER

## ATTACHMENT "B": COMPLIANCE SCHEDULE

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road

Watervliet, Michigan 49098

Mr. Jerry Miller

Contact Person: Mr. Jerry Mr. Date of Issue: May 3, 1991
Date of Reissue: May 3, 1992

#### PRETREATMENT COMPLIANCE SCHEDULE:

(RESERVED)

## ADMINISTRATIVE ORDER

## ATTACHMENT "C": MONITORING REQUIREMENTS

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road

Watervliet, Michigan 49098

Contact Person:

Mr. Jerry Miller

Date of Issue:
Date of Reissue:

May 3, 1991 May 3, 1992

## I. Sample Location:

A. Holding tank at the end of the pretreatment system (self-monitoring location).

B. Septage Hauler Dump Station at the City of Kalamazoo Water Reclamation Plant west of the Raw Sewage Pump Station (Compliance monitoring location).

### II. Monitoring and Reporting: Requirements and Frequency

Monitoring Facilities: User shall install and maintain necessary
monitoring equipment.

<u>Self-Monitoring</u>: User shall perform the following sampling and analyses: An adequate number of samples shall be collected to ensure that the pretreatment process is operating properly and that the discharge does not violate limitations set forth in this Administrative Order. As a minimum, one (1) sample shall be collected during the months of June and December and analyzed for all the listed regulated pollutants, plus MDNR Scans 1 & 2. The samples must be composite samples, where required, and must be representative of the process waste discharge to the Kalamazoo Water Reclamation Plant. All sampling and analyses shall be conducted according to EPA-approved methods (see: 40CFR Parts 136 and 403).

Reporting Requirements: User shall fulfill the following reporting requirements --

<u>Self-Monitoring Reports:</u> Self-Monitoring reports shall be submitted semi-annually. The first self-monitoring report shall be submitted by July 10, 1991 and shall contain information for May, 1991 through June, 1991. Reports for each semi-annual reporting period shall be due January 10th and July 10th each year.

#### At a minimum the reports shall contain:

- a) Measured or estimated average daily flows and maximum flow for the period.
- b) Results of all sampling performed by User.

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#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007 2565 (616) 385 8157

#### VIA FACSIMILE

April 5, 1991

Mr. Jerry Miller Orchard Hill Sanitary Landfill 3378 Hennesy Road Watervliet, Michigan 49098

RE: Disposal of Residuals from City of Kalamazoo Water Reclamation Plant

Dear Mr. Miller:

This letter is in response to your phone request on April 5, 1991.

I am hereby certifying that to the best of my knowledge, the residual solids from the City of Kalamazoo Water Reclamation Plant (KWRP) proposed to be delivered to Orchard Hill Sanitary Landfill in Watervliet, Michigan are representative of the EP-Toxicity analyses now in your possession.

It is my understanding that our new waste hauler contractor, Waste Management Incorporated, will be performing Toxicity Characteristic Leachate Procedure (TCLP) analyses on the KWRP residuals in the near future. When these results are performed, you should receive a copy.

Please let me know if I can be of further assistance.

Sincerely,

Rohel W. Amundson General Superintendent

c:

C. Powers

B. Minsley

B. Merchant

file

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## ON-SITE INSPECTION/MEETING

Name of Facility Orchard 14;// Gard fill  Address  Contact Gerry Miller	Date 10-23-9
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## CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 11-7-89  TIME: 10:15 AM  [] - MEETING: LOCATION -
TALKED WITH: Jerry  REPRESENTING: Orchard Hills
SUBJECT: Lob Results & Status of Pretreatment
COMMENTS:
Sept. 25 3 Cat Results will fox to me
Have ordered treatment plant from Haviland
(and plans later)
ROUTE TO: FICE: Orchard Hills Landfill
SIGNATURE: Some & Menhand

## CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 1-29-89 [≢] - TELEPHONE CONVERSATION
TIME:
KURP ASSEMBLY ROOM)
TALKED WITH: DAN & JERRY
REPRESENTING: DRCHARD HILLS LANDFILL
SUBJECT: Pretreatment of leachate prior to disposal
2) Volume Restrictions? 3) Types OF SOLIDS BEING SENT TO CAMOFICE
comments: O Currently designing system to pretreat wastiwater
Leachate). Looking at a package treatment system from
Haviland (metals precipitation). Will be a batch treatment
System (8-10 weeks delivery on System however). They will send plans, etc with next analytical submitte
They will send plans, etc with next analytical submitte
Also cleaning dorne analytical work less based in operation
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SIGNATURE: Suice S. Yull

## CITY OF KALAMAZOO WATER RECLAMATION PLANT LIQUID WASTE DUMPING NOTIFICATION FORM

HAULING COMPANY: BALKEMA
CUSTOMER NAME: ARGHAND HILL LAND FILL
ESTIMATED VOLUME: ~ 8000 GALLONS
TAKE SAMPLE: YES NO have a copy to
ANALYSES REQUIRED: NOWE (They will haive to me)
DATE EXPECTED: 9-9-89 SAT. TIME: 130/PM
AUTHORIZATION: & GM on hant

1

## CITY OF KALAMAZOO WATER RECLAMATION PLANT LIQUID WASTE DUMPING NOTIFICATION FORM

HAULING COMPANY: Balkama	
customer NAME: Orchard Hill Lundfill	
ESTIMATED VOLUME: 8,000	GALLONS
TAKE SAMPLE: YES NO	1
ANALYSES REQUIRED:	, ,
DATE EXPECTED: 2/10/89 TIME: AM	
AUTHORIZATION: Gras Marvin	<del></del>

₩4. A3#

HAULING COMPANY: BACKEMA, INC.
CUSTOMER NAME: ORCHARD HILL CAMOFICE
ESTIMATED VOLUME: - 5,000 GALLONS
TAKE SAMPLE: YESNO
ANALYSES REQUIRED: NONE
DATE EXPECTED: 3-7-89 1 TIME: AM
AUTHORIZATION: BUM, LA

#### CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 2-2-89	[/] - TELEPHONE CONVERSATION
TIME: 330	[ ] - MEETING: LOCATION -
TALKED WITH: John Sur REPRESENTING: GOVE	lman Associates
SUBJECT: Drehard th'	1 Candfill
COMMENTS: Régulaises  Local Courts.  No surhage leve  to petreat on a  to be able to con-  them on A.O. Shoul	Sad the are limite ls. 5 Said they would have educe level of containent times chines in it in will send
	HARDHICC LANDS.LL



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007-2565 (616) 385-8157

January 18, 1989

Mr. John Cook Orchard Hills Landfill 1936 Dorchester Road Kalamazoo, Michigan 49001

RE: Establishment of Local Limitations for Specific Pollutants Discharged to the City of Kalamazoo Water Reclamation Plant.

#### Dear Mr. Cook:

Thank you for the submittal of monitoring data on the leachate from the Orchard Hills Landfill as required for the continued disposal of this waste at the City of Kalamazoo Water Reclamation Plant (KWRP). The next twelve (12) wasteloads are approved for disposal per the conditions outlined in the letter sent to you from this office dated April 18, 1988 (a copy of this letter is enclosed). Please note that acceptance of this waste is still at the sole discretion of the City of Kalamazoo and is currently under re-evaluation based on the recent generation of local discharge limitations. These limitations were generated in response to Michigan Department of Natural Resources (MDNR) and the U.S. Environmental Protection Agency (EPA) requirements and are detailed below:

Pollutant		Daily Maximum Concentration Limit (in mg/L)	
Cadmium	(Cd)	0.040	
Chromium	(Cr)	4.67	
Copper	(Cu)	2.23	
Lead	(Pb)	0.110	
Nickel	(Ni)	1.59	
Zinc	(2n)	5.30	
Total Cyanide	(CN)	0.250	
Mercury	(Hg)	0.250	

A copy of the actual public notice is attached for your information and reference.

Please note that, based on your latest monitoring data submittal, this leachate waste is above the specific local limits for lead and cadmium (a copy of these latest results are attached). In order to continue the discharge of this waste stream to the KWRP, the following conditions must be met:

Mr. John Cook (continued) January 18, 1989 Page 2 of 2

- 1. The next required set of analyses must include monitoring for all the total PCBs and listed above plus MOCA (methylene parameters bis-2-chloroaniline) in addition to all the previous required parameters. Monitoring for PCBs and MOCA are required in order to ensure compliance with the KWRP's MDNR NPDES discharge permit requirements to the Kalamazoo Please submit the results from these required analyses to this office at least one week prior to the proposed first discharge of the next set of twelve loads. This will allow sufficient time to evaluate and review this next request.
- 2. Since all discharges to the KWRP must be in compliance with all limitations that apply to such discharges by December 31, 1989, an Administrative Order will be issued to your facility by that date. Included in that Order or as a follow-up document, a compliance schedule will be issued so that this waste discharge can meet all necessary limitations by the required compliance date. To help this office generate a reasonable schedule, please submit to this office as soon as possible a proposed schedule that will meet the requirements detailed above. This will greatly assist in the generation of Administrative Orders and Compliance Orders that are realistic and representative of the discharges time constraints.
- 3. Please submit the required information detailed above (except for the required monitoring data outlined in Item #1 above), within 30 days of the receipt of this letter. Please note, however, that the submittal of analytical results must comply with the requirements as outlined in Item 1 above.

Thank you for your cooperation and assistance in this matter and please call this office if you have any questions.

Sincerely,

Bruce E. Merchant,

Industrial Services Supervisor

attach

c R. Amundson, C. Powers, D. Starkey, K. Mottinger, File

#### CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: /-/0-89	TELEPHONE CONVERSATION
TIME: 42 Jpn	[ ] - MEETING: LOCATION -
TALKED WITH: STR	EVE HARD HILLS CANDFILL
SUBJECT: LOCA	2 cm 175 - weed to comply
COMMENTS: Discu	ud of 1989
to meet by e	nd of 1989
ROUTE TO: FILE-	Landhills
s	IGNATURE:

HAULING COMPANY: BACKEMA,	INC		
CUSTOMER NAME: ORCHARD	HILL LANDFILL		
ESTIMATED VOLUME:_		GALLONS	
TAKE SAMPLE: YES_	NO_ λ		
ANALYSES REQUIRED	NONE		-
DATE EXPECTED: 1-4-89	TIME _	Am	_
AUTHORIZATION:	all Mere!	Envl	
_			

#### PUBLIC NOTICE KALAMAZOO INDUSTRIAL PRETREATMENT PROGRAM

Date: December 22, 1988

NPDES Permit Number: MI0023299

The City of Kalamazoo (the City) in accordance with the requirements of its National Pollutant Discharge Elimination System (NPDES) permit is proposing to revise local discharge limits for eight (8) pollutants. The City has submitted an Industrial Pretreatment Program (IPP) and Nondomestic User Control Program to the Michigan Department of Natural Resources and received approval on October 11, 1985. The subject pollutants and the limits for each are as follows:

		DAILY MAXIMUM CONCENTRATION LIMIT
POLLUTANT		MILLIGRAMS PER LITER (mg/L)
Cadmium	(Cd)	0.040
Chromium	(Cr)	4.67
Copper	(Cu)	2.23
Lead	(Pb)	0.110
Nickel	(Ni)	1.59
Zinc	(Zn)	5.30
Total Cyanide	(CN)	0.250
Mercury	(Hg)	0.250

The intent of the IPP is to prevent the discharge from nondomestic sources to municipal treatment facilities of toxic pollutants that may interfere with the municipal wastewater treatment process, that may pass through the municipal facility and pollute the receiving waters, or that may contaminate the municipal sludge and prevent the recycling or the reuse of this sludge. The City of Kalamazoo has identified nondomestic sources that may discharge problem pollutants and has provided control mechanisms to set local discharge limitations, where necessary, to prevent the discharge of these pollutants at unacceptable levels.

Comments or objections to the proposed local limit revisions received by 5:00 p.m., January 20, 1989 will be considered in the final decision to implement. Persons desiring information regarding the proposed pretreatment program revisions should contact Bruce Merchant or Kent Mottinger at the City of Kalamazoo Department of Public Utilities, (616) 385-8157. Written comments should be sent to Bruce Merchant, Industrial Services Supervisor at the Kalamazoo Water Reclamation Plant, 1415 N. Harrison Street, Kalamazoo, MI 49007. Copies of the proposed pretreatment program revisions may be examined at the Kalamazoo Water Reclamation Plant.

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HAULING COMPANY: BALKE MA, INC.
CUSTOMER NAME: ORCHARD HILL LANDFILL
ESTIMATED VOLUME: ~8,500 GALLONS
TAKE SAMPLE: YESNO_X
ANALYSES REQUIRED: NONE
DATE EXPECTED: 12-16-88 TIME: LATE AN
AUTHORIZATION: Suce & Went

Ý.

100

HAULING COMPANY: BALKEMA, INC.
CUSTOMER NAME: DRCHAND HILLS CANOFILL
ESTIMATED VOLUME: ~8,500 GALLONS
TAKE SAMPLE: YESNO
ANALYSES REQUIRED: Nove
DATE EXPECTED: 12-8-88 TIME: PM
AUTHORIZATION:

HAULING COMPANY: BALKEMA, INC.	
CUSTOMER NAME: ORCHARD HILL LANDFILL	
ESTIMATED VOLUME: ~ ~ 9,000	GALLONS
TAKE SAMPLE: YES NO_X	
ANALYSES REQUIRED: NONE	
DATE EXPECTED: 12-2-88 TIME: AM	
AUTHORIZATION: Porce G. yerland	

HAULING COMPANY: BACKEMA, INC	•		
CUSTOMER NAME: DECHAND HILL L	ANDFILL		
ESTIMATED VOLUME:	8,000	GALLONS	
TAKE SAMPLE: YES	NO <u>X</u>		
ANALYSES REQUIRED: NOA	Æ		
DATE EXPECTED: 11-19-88		An	
AUTHORIZATION: BGWenfant			

HAULING COMPANY: BALKEMA, INC.	
CUSTOMER NAME: DRCHARD HILL LANDFI	<u></u>
ESTIMATED VOLUME: v9,000 G	
TAKE SAMPLE: YES NO	
ANALYSES REQUIRED. NONE	
DATE EXPECTED: 11-22-88 TIME: Am	
AUTHORIZATION: Bruce Suffer for	

HAULING COMPANY: BALKEMA, INC.		
CUSTOMER NAME: ORCHARD HILL LAN	NDFILL	
ESTIMATED VOLUME: ~9.		ONS
TAKE SAMPLE: YES	NO_X	
ANALYSES REQUIRED: Nous		
DATE EXPECTED:11-18-88	TIME; LATE AM	
AUTHORIZATION: Power Mysself	was	

HAULING COMPANY: BACKEMA, INC
CUSTOMER NAME: ORCHARD HILL CAUDFILL
ESTIMATED VOLUME: ~ 8,000 GALLONS
TAKE SAMPLE: YES NO
ANALYSES REQUIRED: NONE
DATE EXPECTED: 11-8.88 TIME: AW
AUTHORIZATION: Suce Elifert

HAULING COMPANY: BALKEMA, INC.
CUSTOMER NAME: ORCHARD HILL LANDFILL
ESTIMATED VOLUME: ~ 8,000 GALLONS
TAKE SAMPLE: YES NO
ANALYSES REQUIRED: NONE
DATE EXPECTED: 11-4-88 TIME: 1130/pm
AUTHORIZATION: Bruggy et A

HAULING COMPANY: BAYCEMA, INC.	
CUSTOMER NAME: ORCHARD HILL LANDFILL	
200	GALLONS
TAKE SAMPLE: YES NOX	
ANALYSES REQUIRED: NONE	
DATE EXPECTED: 10-28-88 TIME: ~ 9 %	
AUTHORIZATION: Bruce & Menthant	

HAULING COMPANY: BALKEMA,	INC.	
CUSTOMER NAME: ORCHARO	HILL LANDFILL	
ESTIMATED VOLUME:	n 8,000	GALLONS
TAKE SAMPLE: YES	NOX	
ANALYSES REQUIRED:	NewE	
DATE EXPECTED: 10-25-88		
AUTHORIZATION: Succe 5.	Mendant	
•	1	

HAULING COMPANY: BACKEMA, INC.
CUSTOMER NAME: ORCHARD HILL LANDFILL
ESTIMATED VOLUME. V6000 GALLONS
COTTAIN CONTENTS
TAKE SAMPLE: YES NO
ANALYSES REQUIRED: NONE
DATE EXPECTED: 10-20-88 TIME: 29/Am
AUTHORIZATION: Kuchen gutant
0

#### CITY OF KALAMAZOO

Department of Public Utilities Water Reclamation Plant 1415 N. Harrison Street Kalamazoo, MI 49007

( TCA'S	DATE 10-3-88
	SUBJECT DRCHARD
	HOLL LANDFILL
MESSAGE // G	LEACHATE DELIVERY
Due to the "flood" in	my office - I was
unable to use the usus	
accept this note as "of	ficial" Notification that
Balkema, Inc. Will 5	e in on Tuesday
October 4, 1988 @ and	10 x: 900/m to
October 4, 1988 @ app deliver approx. 8000 e REPLY /eachate. No samp	Fallons of land fill
leachate, No same	de needs to be
1 FAXXA	
Thanks.	
1	
\bar{\gamma}	Since Mentant

Form 614 10/86

FICE - ONGHARD HICK

# LIQUID WASTES DUMPING INFORMATION

	HAULING COMPANY: BALKEMA, INC.
	CUSTOMER NAME : ORCHARD HILL LANDFILL
	EST VOLUME : ~ 8000 GAL
	TAKE SAMPLE : YESNOX
	DATE EXPECTED: 9-21-88 TIME AN
	AUTHORIZATION: BEMerchant
WDI_F	$\ell$

#### CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 10:12 Am	🖄 TELEPHONE CONVERSATION
TIME: 9-20-88	[ ] MEETING - LOCATION:
TALKED WITH: LYNN SPURE REPRESENTING: MDNR —	
REPRESENTING: MDNR -	PLAINWELL DISTRICT
	OFFICE
SUBJECT: CORK ST. C	
ACCEPTANCE OF	"CEACHATE"
- PACCEPTANCE OF	CETTCHAIC
COMMENTS: DATA NOT AV.	ALLABLE FROM CORK STREET
(FROM C/TY)	
,	<u> </u>
BUT MONE Has ON	N Data han samole
Asked Johel to get das	Tu Ran Mar Co.
113 per April 70 gg Court	my om prosely
P: (11.0	
Big Concern -	hlorides fram
I-94 Mellian dia	an commeted to the
"French" drain @ the	e Canelfille
ROUTE TO: FICE - Candfi	1://c
RUUIE 10:01CE - cungy	110,
	$\mathcal{I}_{\mathcal{L}}$
	Kunos III. St
SIGNATURE:	VIVI CO MILWICK

HAULING COMPANY: BALKEMA, INC
CUSTOMER NAME : ORCHARD HILL LANDFILL
est volume: $\sim 8000$ gal
TAKE SAMPLE : YESNO _x
DATE EXPECTED: 9-14 88 TIME PM
AUTHORIZATION: Julie Etherhand

LWDI\_F

\*

Φ,

НА	AULING COMPANY: BALKEMA, NC
	ISTOMER NAME : OKCHARD HILL LANDFILL
	est volume: ~ 8000 gal
	TAKE SAMPLE : YES NO F
DA	TE EXPECTED: 8-16-88 TIME AM
AU	THORIZATION: Bus F. Well
LWDI_F	

	an advantament				
	De la ful ful	Ey3		Number PM Ext 3-5588	
	WHILE	YOU WERE A	W	/AY	
L	TELEPHONED YOU	PLEASE CALL		URGENT	AMATION FACILITY
	RETURNED YOUR CALL	WAS IN TO SEE YOU		LEFT PKG. FOR YOU	ING INFORMATION
ME	WILL CALL AGAIN	WILL BE IN AGAIN	4	PLEASE SEE ME	100 Ext.
Will deliver a load of leachate  Jonorow 9-1-88  Change			HILL LANDFILL  OUT GAL		
AIGI	NER FORM NO. 50-148	DATE EXPECTED AUTHORIZATION		: 9-1-58	TIME Am
	LWDI_F				7

LWDI\_F

#### INTER-OFFICE**MEMO**

To:

Doris Dylhoff, Accounts Coordinator

From:

Bruce E. Merchant, Industrial Services Supervisor Hum

Date:

June 21, 1988

Subject:

Dump Ticket Number 197 - Orchard Hill Landfill

Please note that on dump ticket number 197 dated June 9, 1988 (Hauler: Balkema, Inc.) from Orchard Hill Landfill there was an error in one of the weights taken. The number "12270" should read "8580". Please adjust accordingly and bill appropriately. Thank you.

/09/88 20	7 Balkema, Inc. (Load #1) O Balkema, Inc. (Load #2) 3 Balkema, Inc. (Load #3)	801 Orchard Hill Landfill 1155 Orchard Hill Landfill 3242 Orchard Hill Landfill
06/09/88	197 Balkema, Inc. (Load #1)	801 Orchard Hill Landfill
06/09/88	200 Balkema, Inc. (Load #2)	1155 Orchard Hill Landfill
06/09/88	203 Balkema, Inc. (Load #3)	3242 Orchard Hill Landfill

12270

HAULING COMPANY: BALKE MA, INC
CUSTOMER NAME: ORCHARD HILL CANDETTE
EST VOLUME: ~ 6,500 GAL
TAKE SAMPLE
DATE EXPECTED: 6-9-88 TIME BAN
AUTHORIZATION: June & Me Sh

LWDI\_F

	HAULING COMPANY: BACKEMA, INC.
	HAULING COMPANY: DA CLEMIT, NC.
	CUSTOMER NAME : OLCHARO HILL LANDFILL
	EST VOLUME: N6680 GAL
	TAKE SAMPLE : YES NO
	DATE EXPECTED: 5/17/88 TIME 120/M (NOON)
	AUTHORIZATION: Jay Ment
LWDI_F	

HAULING COMPANY: BAZKEMA, INC.
CUSTOMER NAME: DRCHARD HILL CAND FILL
EST VOLUME: ~ 6800 GAL
TAKE SAMPLE : YES NO K
DATE EXPECTED: $5-2-88$ TIME $\sqrt{1209}$
AUTHORIZATION: Some E. Menhand

LWDI\_F

BAINENH INC
TOURS NY .
CUSTOMER NAME: ORCHASID HILL CANDELL
EST VOLUME: ~ 6900 GAL
EST VOLUME .
DATE EXPECTED: 4-25-88 TIME ~10 AM  AUTHORIZATION: Bucce & Manhand



#### **DEPARTMENT OF PUBLIC UTILITIES**

Water Reclamation 1415 N Harrison Kalamazoo, Michigan 49007-2565 (616) 385-8157

April 18, 1988

Mr. John Cook, Manager Orchard Hill Landfill 3378 Hennesey Road Watervliet, Michigan 49098

Dear Mr. Cook:

This letter is to confirm our conversation on April 14, 1988 regarding less frequent analytical requirements for the disposal of leachate at the City of Kalamazoo Water Reclamation Plant (KWRP). Based on previous analytical data plus the relative consistency of the waste loads, the following analyses need to be conducted on only one of every twelve waste loads disposed of at the KWRP. These parameters are:

Cadmium (Cd)
Chromium (Cr)
Copper (Cu)
Lead (Pb)
Mercury (Hg)
Silver (Ag)
MDNR Scans 1 & 2

Please note that the analysis for mercury (Hg) has been added due to more strict NPDES permit requirements for the KWRP.

Mr. John Cook April 18, 1988 Page 2 of 2

Enclosed are copies of my April 20, 1987 letter and the July 8, 1986 letter from R. Simms to reemphasize the conditional acceptance of this waste at the KWRP. City of Kalamazoo personnel are currently generating a list of local limitations to be applied to <u>all</u> wastes discharged to the KWRP. Reevaluation of all wastes disposed of at this location will occur once these limits are finalized. Continued acceptance of your waste loads will be determined at that time.

Please feel free to contact me if you have any questions regarding this matter.

Sincerely.

Bruce E. Merchant,

Industrial Services Supervisor

У

- c C. Powers, City of Kalamazoo
  - D. Starkey, City of Kalamazoo
  - R. Amundson, City of Kalamazoo

HAULING COMPANY: BALKEMA,, NC.				
CUSTOMER NAME : ORCHARD HILL LAND FILL				
EST VOLUME: ~ 6800 GAL				
TAKE SAMPLE (YES X NO				
DATE EXPECTED: 4-8-88 TIME AFTER 12 m				
AUTHORIZATION: Buce & Merkent				
LWDI_F				

•		R RECLAMATION PLANT O WRP FOR DISPOSAL	Nº 00121			
HAULING COMPANY INFORMATION	BAL (Name)	KEMA HA	ulin			
The State of	(Street Address	)				
••••	(City)	(State)	(Zip Code)			
ORIGIN OF MATERIALI CUSTOMER INFORMATION	(Name)	HARD HILL LAND FIL	1			
	(City)	(State)	(Zip Code)			
WEIGHT	*********	TYPE OF WASTE	********			
6835 GAC Full Weight 427 Empty Weight 168	20 kg	[ ] Septage	Kg			
	350 kg	Other/Specify	25870kg			
TOTAL VOLUME RECEIVED. 25870 kg						
KWRP Represe	ntative 🔀	ENDER.				
Hauling Company Represe		e Balken	u			
Ticket Copy Distribution (Pink Copy to Haul Form 1055 6 30 87	ing Company Re	presentative — Yellow Copy to	KWRP Shift Supervisor)			

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### CITY OF KALAMAZOO

Department of Public Utilities Water Reclamation Plant 1415 N. Harrison Street Kalamazoo, MI 49007

DATE April 4 1988  Subject Of word 11.11  Law 12.11 Learing Lea
Message Message Message Man John Gook Cappel thise elected off
in inite. The water to care up in the law of
10. 1. The with you when you retter.
10. It with you when you rother
REPLY
P.S + 111 shalf on lotte to this allot
P.S I'll digit a lette to this effect

Form 614 10/86

# 

HAULING COMPANY: BACKEMA, INC.
CUSTOMER NAME : DRCHARD HILL LAND FILL (CEACHAT
EST VOLUME : ~ 6,000 GAL
TAKE SAMPLE: YES \( \Omega\) NO  DATE EXPECTED: \( \frac{2-11-88}{\text{Suce F. Mesh.}} \)  AUTHORIZATION: \( \frac{\text{Suce F. Mesh.}}{\text{Mesh.}} \)

# KALAMAZOO WATER RECLAMATION FACILITY LIQUID WASTES DUMPING INFORMATION

HAULING COMPANY: BALKEMA , INC.
CUSTOMER NAME: ORCHARD HILL LANDFILL
EST VOLUME : ~ 8000 GAL
TAKE SAMPLE : YES X NO
DATE EXPECTED: 1-13-88 TIME 12 PM
AUTHORIZATION: Bruce E. Merchant

LWDI\_F

# CITY OF KALAMAZOO WATER RECLAMATION PLANT LIQUID WASTE DUMPING NOTIFICATION FORM

HAULING COMPANY: BALKEMA, MC
CUSTOMER NAME: ORCITARD HILLS LANDFILL
ESTIMATED VOLUME: GALLONS
TAKE SAMPLE: YES NO
ANALYSES REQUIRED: NONE
DATE EXPECTED: 1-10-88 TIME: AM
AUTHORIZATION:

# KALAMAZOO WATER RECLAMATION FACILITY LIQUID WASTES DUMPING INFORMATION

	HAULING COMPANY : BACKEMA	
		LANDFILL
	EST VOLUME : ~ 8000	GAL
	TAKE SAMPLE : YES $X$ NO	
	DATE EXPECTED: 12-1-87 TIME	13 3 pm
	AUTHORIZATION: Buck. Mos	hung
F		U

LWDI\_F

Liquid wastes hauled to wap for disposal $N_{\odot} = 00072$	
HAULING COMPANY INFORMATION: Balkema dro.	
ORIGIN OF MATERIAL/ CUSTOMER INFORMATION:  (Street Address)  (Street Address)	
(City) (State) (Zip Code)	
WEIGHT: TYPE OF WASTE:	
Full Weight: 42, 730 Kg [ ] Septage Kg	•
Empty Welght: 16,850 Kg [ ] Other/Specify Kg	
TOTAL VOLUME RECEIVED: 25,886 Kg	• •
KWRP Representative: Dornell Smith	
Hauling Company Representative:  Ticket Copy Distribution (Pink Copy to Hauling Company Representative — Yellow Copy to KWRP Shift Supervisor)  Form 1055 6 30-87	ie.
<b>\</b>	
2,	, and the second second second second second second second second second second second second second second se

# KALAMAZOO WATER RECLAMATION FACILITY LIQUID WASTES DUMPING INFORMATION

HAULING COMPANY: BACKEMA
CUSTOMER NAME : ORCHARD HILL LANDFILL
EST VOLUME: ~ 8000 GAL
TAKE SAMPLE : YES NO
DATE EXPECTED: 10-6-87 TIME 11 30/Am
AUTHORIZATION: Bruce & Mechant

LWDI\_F

,			
}		STEWATER TREATMENT PLA	NT 18587
	Date 5-28-87	Hilo In Ilell	10001
ı	Company Address Natery	iele P	<del></del>
1	Customer Name Balfent bn	ę.	
1	Origin of Material 25780	Septic Tank	Gals
1	4/2/30	Dry Well	Gals.
. 1	16850	Other - Specify	Gals.
•	Volume Received at KSTW	KSTW 1 epresentative	
	E-145	Hauling Company Representative	4

•

•

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# CITY OF KALAMAZOO, MICHIGAN

April 20, 1987

Mr. John Cook, Jr.
Manager
Orchard Hill Landfill
3378 Hennesey Road
Watervilet, Michigan 49098

Dear Mr. Cook:

This letter is in response to our phone conversation on April 16 and details the conditions under which the Kalamazoo Water Reclamation Plant will continue to accept the Orchard Hill landfill leachate. Representative samples and analyses currently being conducted must continue except for the PCB analyses. These constituents have not yet been detected and therefore no longer need to be analyzed. However, in addition to the trace metals and organics analyses being rum, it has come to my attention since our conversation that total chromium also needs to be analyzed. Please have this additional parameter run the next  $\underline{\text{two}}$  (2) times. If this compound is not present in large quantitites, analysis for it can be stopped. I will contact you after I have received the next two (2) laboratory reports to let you know the status of that particular analysis.

Please submit the above mentioned trace metals and organics analyses reports for every <u>fourth</u> load delivered to the Water Reclamation Plant. This reduced frequency will still allow City personnel to adequately monitor the various compounds of concern.

Please note, however, that grab samples of the leachate may be taken when the loads are delivered to the Water Reclamation Plant and analyzed for the various compound of concern. This will allow the operations staff to determine what impact, if any, these loads may have on the overall treatment process.

Mr. John Cook, Jr. April 20, 1987 Page 2

I have also enclosed a copy of a letter sent to you by Richard Simms on July 8, 1986. I would like to reemphasize the statement he made on page two (2) of the letter regarding our acceptance of the leachate being subject to modification by the influence of the MDNR and the U.S. EPA regulations. The continued monitoring detailed above will assist us by maintaining an accurate and up-to-date database for any future evaluation of the provision of this service. I have also enclosed an updated version of all the leachate data that has been submitted.

I am available for any questions or comments you may have regarding this letter.

Respectfully,

Bruce E. Merchant

Quality Assurance Officer

attach

y

c C. Powers R. Amundson File





# CITY OF KALAMAZOO, MICHIGAN

July 8, 1986

Orchard Hill Landfill 3378 Hennesey Road Watervliet, MI 49098

Att: Mr. John Cook, Manager

Dear Mr. Cook:

We have reviewed your request and supporting data for discharging leachate to the Kalamazoo Water Reclamation Plant. The material, we believe, is acceptable for treatment with no negative impact on our facility.

You may begin the hauling and discharge of the wastewater subject to the following conditions:

- 1. Forty-eight hours advance notice to the plant prior to delivery of each load and no more than 20,000 gallons per day.
- 2. A representative sample and analysis for pollutants of concern to us must be made on the first five loads. Sampling and analysis must be performed by a qualified commercial laboratory. Mr. Bruce Merchant of our office will provide you with assistance in this area and the parameters we wish to have analyzed. On-going monitoring will be established at the completion of this first series of tests.
- 3. The material must be discharged under the supervision of our personnel. Your contact person is Bud Powers.
- 4. Until more data is collected, the rate for disposal of the leachate will be \$0.011/kg. All weights will be made at our facility by our personnel.

Mr. Cook July 8, 1986 Page 2

5. Provision of this service is subject to modification by the influence of MDNR or U.S. EPA regulations.

Sincerely,

R.G. 5 ...

Richard G. Simms, General Superintendent

С

c C. Powers

B. Merchant

J. Eldred

File

COD (mg/l) 9; Cadmum (uyll) 1 Copper 3	lis l86 <sub>+</sub> 130 119 868	7,290	7,750	5,500	6,760				1/11/86	136/86	1736/86	1/1/87	1/20/37	2/23/87	3/13/87		
Cadmum (uglt) ( Copper 3		20	0.9		0,700	5,810	5,630	22,800	24,800	23,100	21,000	27,800	23,200	20,300	24,200		
Copper 3	368		· · ·	135	3	48	36	3 <i>5</i>	46	12	26	93	28	18	20	1	
		310	1,450	196	280	394	260	197	280	150	245	120	220	280	190		
nead 6	50	790	160	166	15	15	28	387	90	20	29	42	190	350	114		
Silver !	72	120	40	173	190	87	124	80	1,100	210	305	<02	(02	0.4	02	1	
Amenable CN <	10	< 10	10	10	10	NR*	NR*	NR*	NR*	NR	NR*	NR*	NR	NR*	NR	1	
PCB's <	<01	<01	<01	< 50 B	<50°	NR*	NR*	NR*	NR*	NR	NRX	< 10	4/0	0</td <td><!--0</td--><td>ļ</td><td></td></td>	0</td <td>ļ</td> <td></td>	ļ	
Bromod chloromethane .	<1	<1	< 1	41	<1	< 1	<1	62	19	<1	<5®	< 5 P	<1	< 1	<1		
D bromochliromethane	41	<	<	< 1	<1	< 1	<1	<5 ®	<1	63 1	< 5	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Z 1 1	</td <td>&lt; 1 ,</td> <td>1</td> <td></td>	< 1 ,	1	
Chloroform	< 1	<1	< 1	<	< 1	< 1	</td <td>&lt;5°</td> <td>&lt;1</td> <td>98</td> <td>&lt;5<b>"</b></td> <td>&lt; 500</td> <td>&lt; 1  </td> <td>&lt;1</td> <td>&lt; 1</td> <td>t</td> <td></td>	<5°	<1	98	<5 <b>"</b>	< 500	< 1	<1	< 1	t	
Methylene Chloride 1	150	31	31	13	39	130	61	7,100	8,500	4,400	6,100	10,000	1,800	1,200	3,300	ı	
	<	<1	30	46	87	3./	12	<5 <sup>®</sup>	5.5	14	55	35	32	79	< 1		
1,2 Dichloroethane	69	30	27	22	76	96	66	450	330	1,700	600	1,200	940	650	520	1	
1,1 Dchloroethene <	<	<	<1	< 1	< 1	<1	< 1	< 5 €	14	</td <td>&lt;5®</td> <td>&lt; 5</td> <td>&lt; 1</td> <td><!--</td--><td><!--</td--><td></td><td></td></td></td>	<5®	< 5	< 1	</td <td><!--</td--><td></td><td></td></td>	</td <td></td> <td></td>		
Cis 1,2 D chlorothene	77	36	35	18	49	62	32	280	350	650	680	2,200	320	270	140		
11,2 Trullorothane .	< 1	<1	< 1	<1	< 1	<1	<1	< 5	32	160	50	130	46	23	16		
Trichloroethene 2	29	36	13	41	39	5.0	20	140	66	56	370	700	36	14	16		
Tetrachloroethene -	< 1	<1	< 1	<1	<1 ,	//	<1	73	32	59	57	/20	40	22	20		
Chloro benzene .	<	<1	<	< 1 1	<	< 1	1.6	33	180	14	2/	< 5 <sup>©</sup>	79	10	<	}	
Benzene	19	15	84	7	15	63	38	۷5	190	350	<5	390	200	170	120		
Ethyl Benzene -	24	21	19	18	20	76	44	<5 ;	640	57	81	60	86	96	710		
Ioluene 1	60	110	130	150	180	110	77	< 5	970	730	720	940	1,600	1,500	1,700		
Styrene 1	12	<	<1	11	<1	69	15	< 5 ●	<1	20	15	18	40	32	< 1		
	50	41	28	55	81	54	43	<5	270	190	290	270	760	300	1000		

# KALAMAZOO WATER RECLAMATION FACILITY LIQUID WASTES DUMPING INFORMATION

HAULING COMPANY: BALKEMA INC.
CUSTOMER NAME : ORCHARD HILL LANDFILL
EST VOLUME: ~ 6600 GAL
TAKE SAMPLE : YES NO K
DATE EXPECTED: 4-14-88 TIME AM
AUTHORIZATION: Buce Entre Const

LWDI\_F

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Bruce, Orchard Hill COD (4/21/87)

	· · · · · · · · · · · · · · · · · · ·				
CITY OF KALAMAZOO WAS Liquid Wastes Haul		wao	4.68	x104 ppin.	
Date 20 APR87				0 11	
Company Name ORCHARD	HILL			(154)	
Company Address	**************************************			701	
Customer Name				1	
Customer Address		<del></del>			
Origin of Material	Septic Tank		Gals		
and XVIIIE 340080	Dry Well		Gals		
EMPTY 15630	LANDFIL	LEACH	A Total		
	Other — Seecify	11			
Volume Received at 4	e June	h			
KSTW	KSTW Representativ	011			
	Hauling Company R	L. Balke	THE.		
E-145		-,			

5-/- X /	WASTEWATER TREATMENT PLANT Hauled to WTP for Disposal 18582
Company Name Ochan	Hill Landell
Company Address Water	will
Customer Name Balkern	- Inc.
Customer Address	
Origin of Material	Septic Tank . Gala
1264 0	Dry Well Gals.
76850	Gals.
Volume Received at	KSTW Neurosentation
KSTW	als.
E-145 25,790 B	Hauning Company Representative

1

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´ Liquid Wastes Haul	STEWATER TREATMENT PLANT led to WTP for Disposal $N_0 = 18556$	}
Date 17 MAR	н. 11	•
Company Name Orchard	1 <del>/</del>	
Company Address WaTeVII	le	
Customer Name Balkema	- Inc	
Customer Address		
Origin of Material 41420	Septic TankGals.	
15630	Dry WellGals.	
25790 kg	Gals. Other — Specify	
Volume Received at	2) Moun	
KSTW 25,790 kg gals.	KSTW Representative	
F-145	Hayling Company Representative	

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*....* 

	WASTEWATER TREATMEN	IT PLA
	Hauled to WTP for Disposal	No
Date 3-5-87	-	
Company Name OCU O	- thill h	and
Company Address		
Customer Name Balke	wa a	
Customer Address		
		<del></del>
Origin of Material	Septic Tank	
Origin of Material and Volume IN 42,30	Septic Tank	
Origin of Material and Volume IN 42,300	1	
and Volume IN 43,300	Dry Well	
and Volume IN 43,300	Dry Well Other — Specify	
and Volume IN 42,300  out 16,80  26,50  Volume Received at	Dry Well Other — Specify KSTW Representative	
and Volume IN 42,300  out 16,80  26,50  Volume Received at	Dry Well Other — Specify	it

.

-

•	WASTEWATER TREATMENT PLANT Hauled to WTP for Disposal No. 1879:
Company Address	
Customer Name	
Customer Address	
Origin of Material s and Volume	Septic TankGals.
IN=34,710	Dry WellGals.
TW = 2 4' 110	Gals.
out=10,860	Other — Specify
Volume Received at	KSTW Representative
кэтw 23, 850	gals. Stewl Smith
E-145	Hauling Company Representative

# CITY OF KALAMAZOO WASTEWATER TREATMENT PLANT Liquid Wastes Hauled to WTP for Disposal No. 18800 Date 2-4-67 Company Name Balkema Company Address Customer Name CRCHARD Hill Customer Address Origin of Material and Volume 42490 Gals. Dry Well Gals. Gals. Other - Specify Volume Received at KSTW Company Representative Hauling Company Representative

	STEWATER TREATMENT PLANT ed to WTP for Disposal No. 18777	
Company Address		
Customer Name		
Customer Address		
Origin of Material and Volume 38290 full	Septic TankGals.  Dry WellGals.	
14520	Gals. Other — Specify	
Volume Received at 77	K Beardslee	
KSTWgals.	KSTW Representative	
E-145	Hauling Company Representative	

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CITY OF KALAMAZO	O WASTEWATER tes Hauled to WTP t		
ス / - / ターシフ		,	18767
Company Name	chard Hil	1-644+1	<i>[</i>
Company Address			
Customer Name		<del></del>	
Customer Address			
Origin of Material	Septic Tank	4/980	Gals.
and Volume	Dry Well	16980	Gais.
Sample taken	Other - Spe	elly all	JAM)
Volume Received at	770000	allen /	The said
KSTW	KSTW Representation	Balken	
	Hauling Con	new Representative	

		STEWATER TREATMENT PLAN ed to WTP for Disposal NO	
Date 1-9-87	J I I QUI	ed to Will for Disposal No	18/00
Company Name			_ <del></del>
Company Address			
Customer Name Orchard	Hills	Landfill	
Customer Address			
Origin of Material Front Board Volume	ick	Septic Tank	Gals
Leachate		Dry Well	Gals.
	770	Other — Specify	Gals.
Volume Received at 270 12	750	Rosald D. Jase KSTW Bepresentative	
KSTW	gals.	All Hallow	
E-145		Hauling Company Representative	

CITY OF KALAMAZOO WA	STEWATER TREATMENT PL	ANT
	iled to WTP for Disposal No	18162
Date TNOV 360	4.7	1010
Company Name CECHARD	HILL LANGFIEL	
Company Address WATER VEI	LET, INIT	
Customer Name		
Customer Address		
Origin of Material /2,	Septic Tank	Gals
origin of Material and Volume Full 343,290	Dry Well	Gals
FMPTY 16,350	LEFCHING A	Gals
	Other - Specify	
Volume Received at	Im 60-3/4	
	KSTW Representative	
KSTWgals	de Balkens	
	Hauling Company Representative	

CITY OF KALAMAZOO WASTEWATER TREATMENT PLANT
Liquid Wastes Hauled to WTP for Disposal

Date 9.15 &6

Company Name Company Address

Customer Name Septic Tank Gals.

Origin of Material Septic Tank Gals.

And Volume For Dry Well Gals.

Waster Specify

Volume Received at KSTW Representative

KSTW Gals.

Hauling Company Representative

Hauling Company Representative

œ

CITY OF KALAMAZOO WAS	STEWATER TREATMENT PLANT
Date 28 AUG 86  Company Name BALKEMA	led to WTP for Disposal No. 181(
Company Address	
Customer Name	
Customer Address	
Origin of Material FULL WT 342240 and Volume EMPTY WT. 1684	) Septic TankGal
EMPTY WT. 1684	ODry WellGal:
	Other - Specify / Gal
Volume Received at	KSTW Representative
KSTWgals.	A STATE OF THE STA
E-146	Bauling Company Representative

Burer - did you see this?

	STEWATER TREATMENT PLANT sled to WTP for Disposal No. 18104
Company Address	
Customer Name	
Customer Address	
and volume	martic Tank Sec (1739) Gals
Leuchate 12740	Dry Well 9/OGals. Gals.
Volume Received at	Other - Specify
KSTWgals.	KSTW Representative
E-145	Hailing Company Representative

CITY OF KALAMAZOO WA	STEWATER TREATMENT PLA	NT
Liquid Wastes Hat	iled to WTP for Disposal No	18273
Date 7.29.86		
Company Name Orchard	Still Landfell	
Company Name Orchard Company Address 3378 Henn	esey Road, Waturlie.	L M:49A8
Customer Name	0	
Customer Address F R		
Origin of Material 2 1860 + 16130	Septic Tank	Gals.
and Volume = 37990 kg	Dry Well	Gals
Final est 12550 + 3950		Gals.
	Other - Specify	
Volume Received at 21490 K	1 / ween Chisan	
KSTWgais	KSTW Representative	
E-145 F= Front Half	Hauling Company Representative	

SENT 70

B Freez 7-31-5c

28/4



# CITY OF KALAMAZOO, MICHIGAN

July 10, 1986

Mr. John Cook 1936 Dorchester Kalamazoo, Michigan 49001

Dear Mr. Cook:

In response to our phone conversation on July 9, I am providing you with a list of required analyses to be run on the first five loads of leachate material that is to be disposed of here at the Water Reclamation Plant. These parameters and the recommended detection limits are listed below:

PARAMETER	RECOMMENDED DETECTION LIMIT
Chemical Oxygen Demand (COD) Cadmium (Cd) Copper (Cu) Lead (Pb) Silver (Ag) Cyanide, Amenable	25 mg/L 0.5 ug/L 1 ug/L 1 ug/L 0.2 ug/L 10 ug/L

Any of the commercial laboratories listed on the attached list should be able to provide you with all these analyses listed. They all should be able to provide you with sample containers and, if necessary, assistance in the actual sampling also.

In addition to the above parameters, you will also need to run the following organic analyses on a representative sample of the first load <u>only</u>. The organic parameters that need to be run on this first load are listed below:

Michigan DNR Organics Scans 1 & 2 Polychlorinated biphenyls (PCB's)

The commercial laboratories listed should also be able to run these analyses and assist in the sampling for these parameters. If any organic compounds of concern show up in these initial analyses and in concentrations of concern to us, further monitoring for them may also be required.

Mr. John Cook July 10, 1986 Page 2

If you have further questions or need more clarification regarding the required analyses or listing of commercial laboratories, I will be available to assist you.

Sincerely,

Since Ellichant

Bruce E. Merchant,

Water Quality Assurance Officer

attach

c C. Powers

R. Simms

J. Eldred

File

### LIST OF APPROVED COMMERCIAL LABORATORIES

- KAR Laboratories, Incorporated
   4425 Manchester Road
   Kalamazoo, Michigan 49002
   Phone: (616) 381-9666
   William Bouma, Ph.D. Laboratory Director
- 2. EDI Engineering and Science 611 Cascade West Parkway, SE Grand Rapids, Michigan 49506-2179 Phone: (616) 942-9600 John P. Dullaghan - Manager, Analytical Services
- 3. Canton Analytical Laboratory 153 Elder Street Ypsilati, Michigan 48197 Phone: (313) 483-7430 Micheal W. Movinski - Technical Representative



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## CITY OF KALAMAZOO, MICHIGAN

July 8, 1986

Orchard Hill Landfill 3378 Hennesey Road Watervliet, MI 49098

Att: Mr. John Cook, Manager

Dear Mr. Cook:

We have reviewed your request and supporting data for discharging leachate to the Kalamazoo Water Reclamation Plant. The material, we believe, is acceptable for treatment with no negative impact on our facility.

You may begin the hauling and discharge of the wastewater subject to the following conditions:

- 1. Forty-eight hours advance notice to the plant prior to delivery of each load and no more than 20,000 gallons per day.
- 2. A representative sample and analysis for pollutants of concern to us must be made on the first five loads. Sampling and analysis must be performed by a qualified commercial laboratory. Mr. Bruce Merchant of our office will provide you with assistance in this area and the parameters we wish to have analyzed. On-going monitoring will be established at the completion of this first series of tests.
- The material must be discharged under the supervision of our personnel. Your contact person is Bud Powers.
- 4. Until more data is collected, the rate for disposal of the leachate will be \$0.011/kg. All weights will be made at our facility by our personnel.

Mr. Cook July 8, 1986 Page 2

5. Provision of this service is subject to modification by the influence of MDNR or U.S. EPA regulations.

Sincerely,

R.G. 5 ...

Richard G. Simms, General Superintendent

C

C C. Powers
B. Merchant

J. Eldred

File



#### PUBLIC SERVICES DEPARTMENT

Wastewater Division 1415 N. Harrison - Kall mazoo: Michigan 49007 2565 (615) 337 8157 - Fax (616) 337-8699

# LETTER OF COMPLIANCE

December 29, 1998

Mr. Ralph Balkema Orchard Hill Landfill 3290 Hennessey Road Watervliet, Michigan 49098

Dear Mr. Balkema:

Enclosed please find the most recent compliance monitoring sample results collected from your facility's sanitary sewer monitoring point (OHL) on November 25, 1998. The sample results indicate this monitoring point is in compliance with the regulated limits for discharge to the Kalamazoo Water Reclamation Plant.

If you have any questions regarding your sample results or any other issues, please contact me at 616-337-8705.

Sincerely,

Robert C. O'Day

Industrial Inspections Supervisor

Robert C OTay

c Sue Foune, Technical Services Manager File

BOD dw/loc's/OHL-1298

Manitoring regulte	from Orchard Hill Landfill: 8	ample Location OHL fi	rom 11/25/98 to 11/25/98
Mountaine resure	non Olcharu Am Lanum. 3	amble Lucation One n	10111 1 1/20/30 10 1 1/20/30

Parameter PCB Aroclor 1016		Result 0.00	*	<u>Detection Limit</u> 0.10 ug/l	<u>Date</u> 11/25/98	Sample Type GRAB	<u>Time</u> 2:50:00 PM	Reason for Analysis Compliance Monitoring
	AVG	0 00						
PCB Aroclor 1221		0.00	*	0.10 ug/l	11/25/98	GRAB	2:50:00 PM	Compliance Monitoring
	AVG	000						
PCB Aroclor 1232		0.00	*	0.10 ug/l	11/25/98	GRAB	2:50:00 PM	Compliance Monitoring
	AVG	0.00						
PCB Aroclor 1242		0.00	*	0.10 ug/l	11/25/98	GRAB	2:50:00 PM	Compliance Monitoring
	AVG	000						
PCB Aroclor 1248		0.00	*	0.10 ug/l	11/25/98	GRAB	2:50:00 PM	Compliance Monitoring
	AVG	000						
PCB Aroclor 1254		0.00	*	0.10 ug/l	11/25/98	GRAB	2:50:00 PM	Compliance Monitoring
	AVG	0 00						
PCB Aroclor 1260		0.00	*	0.10 ug/i	11/25/98	GRAB	2:50:00 PM	Compliance Monitoring
	AVG	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

	LOC, LC	V & QQ LET	TTER REQUES	t Form	
Facility Name: <u>Ovc</u> Contact Person:	hardHill	Land-fill	DATE: INSPECTOR:_	12/18/98 SKK	
☐ Copy Consultant:_					
☐ Return draft to Ins☐ Special Instruction					
Type of Letter N	Needed (Ch	ieck box)			
LOV LETTER (-1 =	= compliance r	nonitoring / -2	= self-monitorir	ıg) (check appr	oprıate box)
☐ BETX-1	□ BETX-2	□ Cd-1	□ Cd-2	☐ Cn-1	□ Cn-2
□ Cr-1	□ Cr-2	□ Cu-1	□ Cu-2	☐ Hg-1	□ Hg~1A*
☐ Hg-2	☐ Hg-2A*	□ Hg-3**	□ Ni-1	□ Ni-2	□ Pb-1
□ Pb-2	□ PCB-1	□ PCB-2	☐ PCB-3**	□ pH-1	□ pH-2
☐ pH2-Cont	☐ TPH-1	□ ТРН-2	□ Zn-1	□ Zn-2	
□ SNC	☐ Non-Com	р			
Monitoring Point(s) Level of Violation: _			Date	:	
□ <u>LOC LETTER</u> □ <u>LOC-1</u> (Co □ LOC-2 (Sel □ LOC-3 (Gr □ LOC-4 (Spe □ LOC-5 (Res	mpliance Mo f-Monitoring oundwater Re ecial Monitor sampling)	nitoring) ) emediation Proj ing)		1	(
Monitoring Point(s)	:O+	11	Date:	11/25	198
Q/Q LETTER			D		
MONITORING POINT: TO BE APPLIED TO WHAT	r month's bill		Date:		

<sup>\*</sup>Letter w/compliance schedule
\*\* Resample LOV letter

## **KAR**Laboratories.Inc.

Kalamazoo Water Reclamation Plant 985002 KAR Project No.:

1415 N. Harrison

Date Reported: 12/14/98 Kalamazoo, MI 49007 Date Activated: 11/30/98

> Date Due: 12/14/98

Date Validated: 12/12/98 Attn: Mr. Tim Meulenberg

Phone 616 381 9666

**Project** 

4425 Manchester Road

Kalamazoo MI 49001

Description: Analysis of one aqueous sample (KWRP C-of-C #19450). Fax 616 381 9698

Dear Client.

Your laboratory data is presented to you in this report. All tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and the result represents the sample as it was received - unless otherwise stated under the "Comments" heading.

If you wish to contact us about this work please mention KAR Project No. 985002. To arrange additional sampling or testing please contact our Client Services Department. If you have a question regarding quality assurance please contact William Rauch.

Thank you for the opportunity to serve you. Please do not he sitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaege

Director of Laboratories

cc: Ms. Theresa Wright

KAR Laboratories, Inc. maintains Full Certification status for Bacteriology, Inorganics, Regulated Organics and Synthetic Organics through USEPA, Michigan Department of Public Health and Indiana State Department of Health This report may only be reproduced in full and not without the written consent of Kalamazoo Water Reclamation Plant

## KARLaboratories, Inc.

## INVOICE

Kalamazoo Water Reclamation Plant Project No.:

1415 N. Harrison

Kalamazoo, MI 49007

Date Activated: 11/30/98 Date Reported: 12/14/98

PO#:

020272

Kalamazoo MI 49001

4425 Manchester Road

Attn: Mr. Tim Meulenberg

Phone 616 381 9666

Project Desc.: Analysis of one aqueous sample (KWRP C-of-C

#19450).

Fax 616 381 9698

Quan Item \_\_\_\_\_\_\_

1 PCB Aroclor 1016

1 PCB Aroclor 1221

1 PCB Aroclor 1232

1 PCB Aroclor 1242

1 PCB Aroclor 1248

1 PCB Aroclor 1254

1 PCB Aroclor 1260

1 PCB Aroclors, total

1 Prep, ECD (aqueous)

Quoted Price of 61.50 per sample (1 sample)

61.50 ========

TOTAL DUE \$61.50

Please indicate Project No. 985002 on check stub or voucher.

I.D. #38-2476290 A FINANCE CHARGE OF 1 1/2% PER MONTH (18% PER YEAR) WILL BE ADDED TO BALANCES AFTER 1/13/99. ORIGINAL INVOICES ARE SENT TO ACCTS. PAYABLE.

\_ -

## LABORATORY REPORT

From:Sandy Mertz

KAR Project No.: 985002

Client: Kalamazoo Water Reclamation Plant

12/14/98 Date Reported:

Project Description: Analysis of one aqueous sample (KWRP C-of-C #19450).

Sample ID: "Orchard Hills Landfill, OHL-32998"

Sampled By: SK of KWRP Sample Date: 11/25/98 Sample Time: 2:50pm

Date Received: 11/30/98 Sample Type: aqueous KAR Sample No.: 985002-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep ECD	Completed		EPA 3510	12/1/98	SAS	
PCB Aroclor 1016	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclor 1221	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8082	12/7/98	MSZ	
PCB Aroclors, total	NA		EPA 8082	12/7/98	MSZ	

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ITY OF KALAI		C	HAIN OF CUST	ODY RE	CORD	AND L	AB ANALYSI	S REPORT FORM	1.0	<i></i>
A15 N Harrison	OF PUBLIC UTILITIES	184	AMPLERS , ,			PI	URPOSE OF ANALYSIS		19	450
alamazoo Michig 16 337 8157	gan 49007	(5	ignature Fuil	ema			Compliance	Monitoring	TIME	TIME
ITEM NUMBER	SAMPLEID	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	D A T E	T I M E	C C F M A	SAMPLE LO	CATION, DESCRIPTION REMARKS	DATE/TIME	DATE/
	Orchard Hill Landfill	0HL 32998	1-12.		2:50 PM	1	Tank /	Cloudy PCB's	/ED 8Y ure)	/ED BV
									RECEIVED (Signature)	RECEIVED (Signafure)
									DATE/TIME	DATE TIME
									₩ ₩ ₩	<u>}</u>
					7.				뒤	SHED B
									3 RELINOUISHE (Signature)	4 RELINQUISHED B (Signature)
									TIME	TIME 4
GENERAL/CO	1	RESULT	TRACE METALS	RESU	ULT ORG	ANIC COM	IPOUNDS RESUL	r	DATE/III	DATE TI
рн	grab 7.1		CADMIUM			voc s		- '.		+
BOD		<del> </del>	TOTAL CHROMIUM	<del></del>		<u></u>		<u>'</u>	夏	
CBOD	~ <del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>		HEX CHROME						25 S	
COD	<del> </del>	<u> </u>	COPPER			METHOD 6	01		RECEIVED (Signature)	RECE VED (Signature)
TSS			LEAD			METHOD 6	02		ECE (	Sign.
VSS			NICKEL	·		METHOD 8	015		]	
NH³ N			ZINC			METHOD 8	260		TIME 10:00 AM	TIME
TOTAL P	_		SILVER				_		TE 3	1 E
ORTHO F	3		MERCURY			FORMALDI	EHYDE		0 300	70
GREASE	/OIL		BERYLLIUM		V	PCBS TO	TAL		\\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\	\$\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
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CN - TOT	AL		ARSENIC			OTHER		REMARKS	ELINQUIS grature)	X 1.1) W. VENNO 2 RELINQUISHED E (Signature)
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#### PUBLIC SERVICES DEPARTMI

Wastewater Divi 1415 N. Harr Kalamazoo, Michigari 49007-2 (616) 337-8 Fax (616) 337-8

## LETTER OF COMPLIANCE

January 23, 1998

Mr. Ralph Balkema Orchard Hill Landfill 3290 Hennessey Road Watervliet, Michigan 49098

Dear Mr. Balkema:

Enclosed please find Compliance Monitoring sample results for your facility's sanitary sewer monitoring point (OHL) for samples that were collected October 24, 1997. The sample results indicate this monitoring point is in compliance with the regulated limits.

If you have any questions regarding your sample results or any other issues, please contact Sandy Kuilema at 337-8516 or myself at 337-8705.

Sincerely,

Robert C. O'Day

Industrial Inspections Supervisor

Thobat C Oday

c Sue Foune, Technical Services Manager File

BOD:dw/loc's/OHL-0198

Monitoring results	from Orchard Hill Lar	ndfill: Sample Locati	on OHL from	10/24/97 to 10/24/97

<u>Parameter</u>	Result		Detection Limit	Date	Sample Type	Time	Reason for Analysis
1,1,1,2-TETRACHLOROETHENE	0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,1,1-TRICHLOROETHANE	0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,1,2,2-TETRACHLOROETHANE	0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,1,2-TRICHLOROETHANE	0.00 ug/l	*	5.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONIT ORING
AVO	0 00						
1,1-DICHLOROETHANE	0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,1-DICHLOROETHENE	0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30.00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,1-DICHLOROPROPENE	0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,2,3-TRICHLORO BENZENE	0.00 ug/l	*	8.00 ug/l	10/24/97	GRAB	9:30.00 AM	COMPLIANCE MONITORING
AVO	0 00						
1,2,3-TRICHLOROPROPANE	36.20 ug/l		11.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	36 20						
1,2,4-TRICHLOROBENZENE	0.00 ug/l	*	7.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVC	000						
1,2,4-TRIMETHYL BENZENE	7.50 ug/l	······	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	7 50						
1,2-DIBROMO-3-CHLORO PROPANE	0.00 ug/l	*	5.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVO	0 00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results from	Orchard Hill Landfill: Sa	ample Location OHL from	10/24/97 to 10/24/97

Parameter		Result	*	Detection Limit	Date	Sample Type	<u>Time</u>	Reason for Analysis
1,2-DIBROMOETHANE	AVG	0.00 ug/l 0.00	-	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
1,2-DICHLOROBENZENE		0.00 ug/l	*	6.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
1,2-DICHLOROETHANE		0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
1,2-DICHLOROPROPANE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
1,3,5-TRIMETHYL BENZENE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
1,3-DICHLOROBENZENE		0.00 ug/l	*	6.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
1,3-DICHLOROPROPANE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
1,4-DICHLOROBENZENE		0.00 ug/l	*	7.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
2,2-DICHLOROPROPANE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
2-CHLORO TOLUENE		0.00 ug/l	*	5.00 ug/t	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
Z-NITROPROPANE		0.00 ug/l	*	5.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
-CHLORO TOLUENE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						

	from Orchard Hill Land		O. 17 F 40/04/05	T v 4 W 10 1 10 W
Monitoring recilite	Trom ( )rchard Will Lanc	itili: Samnia i nestinn	CHR tram 111/24/M	/ tr 111/24/9/
Monitorna resurts	HOW CICIATO THE LAME	IIIII. Daiibie Location	OHE HORE TOLETS	1 (0 10)27/01

<u>'arameter</u> 4-METHYL 2-PENTANONE	A) (O	386.00 ug/l		Detection Limit 4.00 ug/l	<u>Date</u> 10/24/97	Sample Type GRAB	<u>Time</u> 9:30:00 AM	Reason for Analysis COMPLIANCE MONITORING
	AVG	386 00						
ACETONE		5,809.00 ug/l		10.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	5,809 00						
ACRYLONITRILE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
ALLYL CHLORIDE		0 00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
AMMONIA NITROGEN		486.00 mg/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	486 00						
ARSENIC		57.40 ug/l	· · · · · · · · · · · · · · · · · · ·		10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	57 40						
BENZENE		7.16 ug/l		3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	7 16						
BROMOBENZENE		0.00 ug/l	*	6.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
BROMOCHLOROMETHANE		0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
BROMODICHLOROMETHANE		0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9·30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
BROMOFORM		0.00 ug/l	*	9.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
BROMOMETHANE		0.00 ug/l	*	8.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000		_				

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results from	- I I I I I I I I I I I I I I I I I I I	 4 A (A 4 (A T Y 4 T Y A 1 ) A T
monitoring results in our		, , , , , , , , , , , , , , , , , , , ,

Parameter CADMIUM		Result 96.10 ug/l	J-10-	<u>Detection Limit</u>	<u>Date</u> 10/24/97	Sample Type GRAB COMP.	<u>Time</u> 9:30:00 AM	Reason for Analysis Compliance Monitoring
	AVG	96 10						·
CARBON DISULFIDE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
CARBON TETRACHLORIDE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
CBOD 5-DAY		4,390.00 mg/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	4,390 00						
CHLOROACETONITRILE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
CHLOROBENZENE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
CHLOROETHANE		0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
CHLOROFORM		0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
CHLOROMETHANE		0.00 ug/l	*	7.00 ug/i	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
CIS-1,2-DICHLOROETHENE	<del></del>	0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
CIS-1,3-DICHLOROPROPENE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
COD		249,600.00 mg/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AvG	:49,500 00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results	from Orchard	Hill Landfill:	Sample Locati	on OHL from	10/24/97 to 10/24/	/97

Parameter COPPER		Result 156.00 ug/l	***	Detection Limit	<u>Date</u> 10/24/97	Sample Type GRAB COMP.	<u>Time</u> 9:30:00 AM	Reason for Analysis Compliance Monitoring
	AVG	156 00						
CYANIDE		0.00	*	20.00 ug/l	10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	000						
DIBROMOCHLOROMETHANE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
DIBROMOMETHANE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
DICHLOROACETONE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
DICHLORODIFLUOROMETHAN	E	0.00 ug/l	*	6.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
DIETHYL ETHER		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG.	0 00						
ETHYL METHACRYLATE		0.00 ug/l	*	12.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
ETHYLBENZENE		17.20 ug/l		3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	17 20						
HEXACHLOROBUTADIENE		0.00 ug/l	*	5.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
HEXACHLOROETHANE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0.00						
ODOMETHANE		0.00 ug/l	*	12.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						

<sup>\*</sup> indicates manitoring result below detection limit

Monitoring results from Orchard Hill Landfill: Sample Location OHL from 10/24/97 to 10/24/97

F +,

<u>Parameter</u> ISOPROPYL BENZENE		Result 0.00 ug/l	*	Detection Limit 3.00 ug/l	<u>Date</u> 10/24/97	Sample Type GRAB	<u>Time</u> 9:30:00 AM	Reason for Analysis COMPLIANCE MONITORING
	AVG	0 00						
LEAD		11.40 ug/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	11 40						
MERCURY		0.00	*	0.50 ug/l	10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	000						
METHACRYLONITRILE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
METHYL ACRYLATE		0.00 ug/l	*	9.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
METHYL BUTYL KETONE		14.20 ug/l		6.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	1420						
METHYL ETHYL KETONE		13,072.00 ug/l		8.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	13,072 00						
METHYL METHACRYLATE		0.00 ug/l	*	9.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
METHYL-T-BUTYL ETHER		6.10 ug/l		3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	6 10						
METHYLENE CHLORIDE		30.80 ug/l		4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	30 80						
N-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
N-BUTYL CHLORIDE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	ĀVG	000						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results	from Orcha	rd Hill Landfill:	Sample Location	OHL from	m 10/24/97 to 10/24/97	,

Parameter N-PROPYL BENZENE		Result 0.00 ug/l	*	Detection Limit 3.00 ug/l	<u>Date</u> 10/24/97	Sample Type GRAB	<u>Time</u> 9:30:00 AM	Reason for Analysis COMPLIANCE MONITORING
	AVG	0 00						
NAPHTHALENE		0.00 ug/l	*	8.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
NICKEL		173.00 ug/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	173 00						
NITROBENZENE		0.00 ug/l	*	5.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
P-ISOPROPYL TOLUENE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	000						
PCB Aroclor 1016		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	000						
PCB Aroclor 1221		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	000						
PCB Aroclor 1232		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	0.00						
PCB Aroclor 1242		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	0 00						
PCB Aroclor 1248		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	0 00						
PCB Aroclor 1254		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	000						
PCB Aroclor 1260		0.00	*	0.10 ug/l	10/24/97	GRAB	9:30:00 AM	Compliance Monitoring
	AVG	0.00						-

<sup>\*</sup> indicates monitoring result below detection limit

# Monitoring results from Orchard Hill Landfill: Sample Location OHL from 10/24/97 to 10/24/97

Parameter PENTACHLOROETHANE	AVG	<b>Result</b> 0.00 ug/l 0∞	*	Detection Limit 5.00 ug/l	<u>Date</u> 10/24/97	Sample Type GRAB	<u>Time</u> 9:30:00 AM	Reason for Analysis COMPLIANCE MONITORING
PROPIONITRILE		0.00 ug/l	*	10.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
SEC-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
SILVER		0.00	*	0.50 ug/i	10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	0 00						
SOLUBLE PHOSPHORUS		0.33 mg/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	0 33						
STYRENE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
T-1,4-DICHLORO-2-BUTENE		0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
T-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
TETRACHLOROETHENE		0.00 ug/l	*	8.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	0 00						
TETRAHYDROFURAN	·	109.00 ug/l		6.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	109 00						
TOLUENE		134.60 ug/l		4.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
	AVG	134 60						
TOTAL CHROMIUM		91.00 ug/l		······································	10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
	AVG	91 00						

<sup>\*</sup> indicates monitoring result below detection limit

Manitorina recult	s from Orchard Hill Lan	dfills Cample   postion	OHI from 1	0/24/97 to 40/24/97	
Monitoring result	s irom Oremard filli Lan	uiii: Sampie Location	OUT ILOUI I	UIZAISI LO LUIZAISI	

Parameter TOTAL PHOSPHORUS AVG	<b>Result</b> 0.88 mg/l  0.88		<u>Detection Limit</u>	<u>Date</u> 10/24/97	Sample Type GRAB COMP.	<u>Time</u> 9:30:00 AM	Reason for Analysis Compliance Monitoring
TOTAL SUSPENDED SOLIDS	590.00 mg/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
AVG	590 00						
TRANS-1,2-DICHLOROETHENE	0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVG	0 00						
TRANS-1,3-DICHLOROPROPENE	0.00 ug/l	*	3.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVG	0 00						
TRICHLOROETHENE	0.00 ug/l	*	3.00 ug/i	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVG	0 00						
TRICHLOROFLUOROMETHANE	0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVG	0 00						
VINYL CHLORIDE	0.00 ug/l	*	2.00 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVG	0.00						
VOLATILE SUSPENDED SOLIDS	245.00 mg/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
AVG	245 00						
XYLENE	54.40 ug/l		4.50 ug/l	10/24/97	GRAB	9:30:00 AM	COMPLIANCE MONITORING
AVG	54 40						
ZINC	1,810 00 ug/l			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
AVG	1,810 00						
рН	6.90 S.U.			10/24/97	GRAB COMP.	9:30:00 AM	Compliance Monitoring
AVG	6 90						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring resu	Ite from Ore	hard Hill I an	dfill: Sample	IHO noiteau	from 1/1/94 to 1/1/98
INCHIONING LESU	ns non on	ilalu mili Lali	unn. Samble	LUCAUUII ONL	110111 1/1/34 10 1/1/30

Parameter  AMMONIA NITROGEN		Result 774.00 mg/l	 <b>Detection Limit</b>	<u>Date</u> 3/14/94	Sample Type GRAB	<u>Time</u> 9:25:00 AM	Reason for Analysis
AMMONIA NITROGEN		96.00 mg/l		10/10/95	GRAB	1:20:00 PM	Compliance Monitoring
	AVG	435 00					
CBOD 5-DAY		6,160.00 mg/l		3/14/94	GRAB	9:25:00 AM	
	AVG	6,160 00					
COD		7,250.00 mg/l		3/14/94	GRAB	9:25:00 AM	
COD		800.00 mg/l		10/10/95	GRAB	1:20:00 PM	Compliance Monitoring
COD		6,560.00 mg/l		2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	4,870 00					
TOTAL SUSPENDED SOLIDS		237.50 mg/l		3/14/94	GRAB	9:25:00 AM	
TOTAL SUSPENDED SOLIDS		77.50 mg/l		10/10/95	GRAB	1:20:00 PM	Compliance Monitoring
TOTAL SUSPENDED SOLIDS		190.00 mg/l		2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG	168 33					

<sup>\*</sup> indicates monitoring result below detection limit

IPH Form 1015	CN AME	CN TOTAL	CHLORIDE	GREASE/OIL	ORTHO P	d DVIOL	N-K-N	VSS	1881	COB	СВОО	ВОД	7		GENERAL/CONVENTIONAL							2		NUMBER	ITEM	1415 N. Harrison Kalamazoo Michigan 49007 616 337 8157	CITY OF KALAMAZOO DEPARTMENT OF PUE
11/18/1997 OHL	AMENABLE	(		OIL .					TSS 590			—CBOD——439	6.9	arab	NVENTIONAL							Orchard Hill	ochard Hill		6 A M D	1 49007	CITY OF KALAMAZOO  DEPARTMENT OF PUBLIC UTILITIES
7 TW OHLD9697 L 297		7772	1		7		0.88 mg/L/	, (S <sub>111</sub>	590.00 mg/I v	7   mg 0:002672	· · · · · · · · · · · · · · · · · · ·	4390-0 mg/I			RESULT TR.							29797	29797	NUMBER	SAMPLE	SAMPLERS (Signature)	CHAIN
1997 COC#17941	OHL29797	ARSENIC	BABIUM	BERYLLIUM	MERCURY	SILVER	ZINC	NICKEL	LEAD	COPPER	HEX CHROME	TOTAL CHROMIUM	САВМІИМ	BATCH ASY	TRACE METALS							1-500ml.	2-12.	OF CONTAINER	NUMBER & SIZE	ERS Tailer	N OF CUSTODY
	29797 09-Dec-97	58.4			< 0.5	<0.5	1810	173	11.4	156		91	96.1		RESULT O							124/97 AM	1924 7 PM	m ¬		<b>,</b>	DY RECORD
17941	97	OTHER		PCBS TOTAL	FORMALDEHYDE		METHOD 8260	METHOD 8015	METHOD 602	METHOD 601			VOC S		ORGANIC COMPC							H	<i>H</i>	P X B A		PURPOSE O	AND LAB
F	REM	ARK				7 (28	<i>\$</i>								OMPOUNDS RESULT							OHL Black /CN-	OHL / Black / Metals	& REMARKS	SAMPLE LOCATION, DESCRIPTION	Compliance Youtoring	ANALYSIS REPORT FORM
(Sigi	INQU nature INQU nature	e) ler IISHE	na			7 7 7 7	:45 PM	(Sig	CEIV	ilw ED P	3 Y		10	41	TIME	(Sign	NQUIS ature) NQUIS ature)	 	E/TIM	E F	RECEIVI Signatu RECEIVI Signatu	re) ED BY		DATE/		17940	į

SAMPLE LOCATION:	ORCHARD HILL LANDFILL
SAMPLE ID NUMBER:	OHL-29797
SAMPLE DATE.	10/24/97
SAMPLE TIME:	9 30 AM
ANALYSIS DATE:	10/28/97
COC NUMBER	17941

Results are in ppb(ug/l) EPA METHOD 624

	MDL.	
	10X	
Chloromethane	72	Not Detected
Vinyl Chloride	23	Not Detected
Bromomethane	7.5	Not Detected
Chloroethane	16	Not Detected
Trichlorofluoromethane	21	Not Detected
	25	Not Detected
1,1-Dichloroethene	36	30 8
Methylene Chloride		
t-1,2-Dichloroethene	30	Not Detected
1,1-Dichloroethane	27	Not Detected
Chloroform	19	Not Detected
1,1,1-Trichloroethane	2 1	Not Detected
Carbon Tetrachloride	27	Not Detected
1,2-Dichloroethane	19	Not Detected
Trichloroethene	3 1	Not Detected
1,2-Dichloropropane	27	Not Detected
Bromodichloromethane	22	Not Detected
c-1,3-Dichloropropene	29	Not Detected
t-1,3-Dichloropropene	3 1	Not Detected
	45	Not Detected
1,1,2-Trichloroethane		
Tetrachloroethene	80	Not Detected
Dibromochloromethane	38	Not Detected
Chlorobenzene	2 7	Not Detected
Bromoform	86	Not Detected
1,1,2,2-Tetrachlorethane	39	Not Detected
1,4-Dichlorobenzene	70	Not Detected
1,3-Dichlorobenzene	5 9	Not Detected
1,2-Dichlorobenzene	57	Not Detected
BTEX COMPOUNDS		
Benzene	3 2	7 16
Toluene	37	134 6
Ethylbenzene	27	17 2
•	64	38 7
m&p-Xylene	28	15 7
o-Xylene	20	157
Additional VOC's by 8260		
Dichlorodifluoromethane	6 <i>4</i>	Not Detected
Diethyl Ether	30	Not Detected
Acetone	10 1	5809
lodomethane	119	Not Detected
Carbon Disulfide	25	Not Detected
Allyl Chloride	23	Not Detected
Acrylonitrile	3 1	Not Detected
Methyl -t-Butyl Ether	3 5	6 1
monty, cody, color		• .

17941

SAMPLE LOCATION: ORCHARD HILL LANDFILL
SAMPLE ID NUMBER: OHL-29797
SAMPLE DATE: 10/24/97
SAMPLE TIME: 9 30 AM
ANALYSIS DATE: 10/28/97

Results are in ppb(ug/l) EPA METHOD 624

COC NUMBER

	MDL	
2,2-Dichloropropane	25	Not Detected
c-1,2-Dichloroethene	28	Not Detected
Methyl Ethyl Ketone	85	13072
Propionitrile	100	Not Detected
Methyl Acrylate	86	Not Detected
Bromochloromethane	19	Not Detected
Methacrylonitrile	36	Not Detected
Tetrahydrofuran	56	109
n-Butyl Chloride	28	Not Detected
1,1-Dichloropropene	23	Not Detected
Dibromomethane	27	Not Detected
Methyl Methacrylate	88	Not Detected
2-Nitropropane	53	Not Detected
Chloroacetonitrile	35	Not Detected
4-Methyl 2-Pentanone(MIBK)	4 2	386
Ethyl Methacrylate	117	Not Detected
Dichloroacetone	<i>4</i> 5	Not Detected
1,3-Dichloropropane	3 7	Not Detected
Methyl Butyl Ketone	60	14.2
1,2-Dibromoethane	40	Not Detected
1,1,1,2-Tetrachloroethene	44	Not Detected
Styrene	27	Not Detected
Isopropyl Benzene	3 4	Not Detected
1,2,3-Trichloropropane	110	36 2
Bromobenzene	58	Not Detected
t-1,4-Dichloro-2-Butene	3 2	Not Detected
n-Propyl Benzene	3 5	Not Detected
2-Chloro Toluene	45	Not Detected
1,3,5-Trimethyl Benzene	3 1	Not Detected
4-Chloro Toluene	4 4	Not Detected
t-Butyl Benzene	37	Not Detected
1,2,4-Trimethyl Benzene	4 4	7 5
Pentachloroethane	5 1	Not Detected
sec-Butyl Benzene	38	Not Detected
p-isopropyi Toluene	3 2	Not Detected
n-Butyl Benzene	3 6	Not Detected
Hexachloroethane	<i>37</i>	Not Detected
1,2-Dibromo-3-Chloro Propane	49	Not Detected
Nitrobenzene	5 1	Not Detected
1,2,4-Trichlorobenzene	6 <i>6</i>	Not Detected
Hexachlorobutadiene	5 1	Not Detected
Naphthalene	8 0	Not Detected
1,2,3-Trichloro Benzene	80	Not Detected

15111 to: 590-1225-01-657-1 00

Thank you. T. Wright

**KAR**Laboratories, Inc.

## **INVOICE**

Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo, MI 49007

Project No.: Date Activated: 10/27/97 Date Reported: 11/10/97

PO#:

010728

Kalamazoo, MI 49001

4425 Manchester Road

Attn: Mr. Tim Meulenberg

Phone 616 381-9666

Fax 616 381-9698

Project Desc.: Analysis of one aqueous sample (KWRP C-of-C

#17943).

Quan Item

1 PCB Aroclor 1016 1 PCB Aroclor 1221

1 PCB Aroclor 1232

1 PCB Aroclor 1242

1 PCB Aroclor 1248 1 PCB Aroclor 1254

1 PCB Aroclor 1260

1 PCB Aroclors, total

1 Prep, ECD (aqueous)

Quoted Price 61.50

=======

TOTAL DUE \$ 61.50

Please indicate Project No. 973866 on check stub or voucher.

I.D. #38-2476290 A FINANCE CHARGE OF 1 1/2% PER MONTH (18% PER YEAR) WILL BE ADDED TO BALANCES AFTER 12/10/97. ORIGINAL INVOICES ARE SENT TO ACCTS. PAYABLE.



## KARLaboratories.Inc.

Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo, MI 49007

Date Reported : 11/10/97

Date Activated : 10/27/97

KAR Project No.:

Date Due : 11/10/97

973866

Attn: Mr. Tim Meulenberg Date Validated: 11/10/97

Enne 616 381 9666

---Co Manchester Road

Kalemazoo MI 49001

Fax 616 381 9698

Project

Description: Analysis of one aqueous sample (KWRP C-of-C #17943).

Dear Client,

Your laboratory data is presented to you in this report. Unless otherwise stated under the "Comments" heading, all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and the result represents the sample as it was received

If you wish to contact us about this work please mention KAR Project No 973866 To arrange additional sampling or testing please contact our Client Services Department If you have a question regarding quality assurance please contact William Rauch

Thank you for the opportunity to serve you Please do not hesitate to call if we can provide additional assistance

Respectfully submitted,

hichard ) ger-

Michael J Jaeger

Director of Laboratories

KAR Laboratories Inc maintains Full Certification status for Bacteriology Inorganics Regulated Organics and Synthetic Organics through USEPA Michigan Department of Public Health and Indiana State Department of Health This report may only be reproduced in full and not without the written consent of Kalamazoo Water Reclamation Plant

## LABORATORY REPORT

KAR Project No.: 973866

Date Reported : 11/10/97

Client: Kalamazoo Water Reclamation Plant

Project Description: Analysis of one aqueous sample (KWRP C-of-C #17943).

Sample ID: "Orchard Hill, OHL29797"

Sampled By:  $SK ext{ of } KWRP$  Date Received: 10/27/97 Sample Date: 10/24/97 Sample Type: aqueous Sample Time: 9:30am KAR Sample No.: 973866-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep, ECD	Completed		EPA 3510	10/31/97	SAS	
PCB Aroclor 1016	<01	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8081	11/7/97	MSZ	
PCB Aroclors, total	NA		EPA 8081	11/7/97	MSZ	

Catalose Catalose

CITY OF KALAMAZOO CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM DEPARTMENT OF PUBLIC UTILITIES 1415 N. Harrison SAMPLERS: PURPOSE OF ANALYSIS: 17943 (Signature) Kalamazoo, Michigan 49007 Compliance Monitorina 616 337-8157 DATE/TIME SAMPLE LOCATION, DESCRIPTION ITEM SAMPLE **NUMBER & SIZE** 0 R SAMPLE I.D. NUMBER NUMBER OF CONTAINER М & REMARKS В SampleTap 9:30 Orchard Hill OHL29797 1-11. ΒΥ: RECEIVED ( (Signature) DATE/TIME ВY: 4 RELINQUISHED E (Signature) 8:33 ORGANIC COMPOUNDS RESULT RESULT GENERAL/CONVENTIONAL RESULT TRACE METALS pН CADMIUM VOC'S TOTAL CHROMIUM BOD CBOD HEX. CHROME COD COPPER METHOD 601 METHOD 602 TSS LEAD VSS NICKEL METHOD 8015 NH2-N ZINC METHOD 8260 TOTAL P SILVER ORTHO P MERCURY **FORMALDEHYDE** PCB'S - TOTAL GREASE/OIL **BERYLLIUM** CHLORIDE **BARIUM** REMARKS:

**ARSENIC** 

OTHER

CN - TOTAL

TPH

CN - AMENABLE

## KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002



Kalamazoo Water Reclamation Plant

1415 N. Harrison Kalamazoo, MI 49007

Attn: Mr. Tim Meulenberg

KAR Project No.: 953094

Date Reported : 10/25/95

Date Activated : 10/11/95

Date Due : 10/25/95

Date Validated: 10/25/95

Project Description: Analysis of one aqueous sample from Orchard Hill Landfill.

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 953094. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

## ANALYTICAL REPORT

KAR Project No.: 953094

Date Reported: 10/25/95

Client: Kalamazoo Water Reclamation Plant

Project Description: Analysis of one aqueous sample from Orchard Hill Landfill.

Sample ID: "Orchard Hill Landfill, OHL28395"

Sampled By: SR of KWRP

Date Received: 10/11/95

Sample Date: 10/10/95

Sample Type: aqueous

KAR Sample No.: 953094-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<01	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8080A	10/17/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	10/17/95	MSZ	

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KAR Laboratories, Inc.

(616) 381-9666

DEPARTMENT THE SAMPLE ID.  SAMPLE ID. SAMPLE	CITY OF		JU ™BLIC UTILITIE	c	CHA	NIN	OF (	CUSTO	DY REC	OF	RD A	AND	LAB	ANALYSI	S REPO	DR PA		
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PH CADMIUM EPA METHOD 601  BOD TOTAL CHROMIUM  CBOD HEX CHROME  COD COPPER  TSS LEAD  VSS NICKEL  NH, N ZINC EPA METHOD 602  TOTAL P SILVER  ORTHO P MERCURY  GREASE/OIL  BERYLLIUM  EPA METHOD 601  EPA METHOD 601  A CADMIUM  EPA METHOD 601  A CADMIUM  EPA METHOD 601  A CADMIUM  EPA METHOD 601  A CADMIUM  EPA METHOD 602  A CADMIUM  EPA METHOD 602  A CADMIUM  A CADMIUM  A CADMIUM  BERYLLIUM  A CADMIUM  A CA																	3 RELINQUISHED (Signature)	4 RELINQUISHED (Signature)
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NH, N ZINC EPA METHOD 602  TOTAL P SILVER  ORTHO P MERCURY  GREASE/OIL  BERYLLIUM															- \	9	ECE!	ECE!
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		CN - AME	ENABLE									OTHE	3		REM!		ELINOUI	SC Z ELINOUI gnature

TAR CITY OF KALAGE CO. CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPOR DEPARTMEN! TUBLIC UTILITIES SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Nº 14634 Kalamazoo, Michigan 49007 616 337-8157 E/TIME G, C SAMPLE LOCATION, DESCRIPTION ITEM SAMPLE NUMBER & SIZE Α ō R SAMPLE LD. NUMBER NUMBER OF CONTAINER м М & REMARKS В septic Hauters/ Cloudy 0112 Orchard Hill One-16 Landfil 28395 RECEIVED E RECEIVED (Signature) DATE/TIME Α.: 4 RELINQUISHED B (Signature) 3 RELINQUISHED E (Signature) GENERAL/CONVENTIONAL TRACE METALS RESULT ORGANIC COMPOUNDS RESULT RESULT рΗ CADMIUM EPA METHOD 601 BOD TOTAL CHROMIUM CBOD HEX. CHROME COD COPPER TSS LEAD VSS NICKEL **EPA METHOD 602** NH, N ZINC TOTAL P SILVER ORTHO P MERCURY BERYLLIUM GREASE/OIL BARIUM CHLORIDE REMARKS: RELINQUISHED E Signature) 2 | RELINQUISHED E | (Signature) CN - TOTAL CN - AMENABLE OTHER

Monitoring results from Orchard Hill Landf	I: Sample Location	OHL from	2/22/96 to	2/22/98
--	--------------------	----------	------------	---------

Parameter	<u>Result</u>		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
1,1,1,2-TETRACHLOROETHENE	0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,1,1-TRICHLOROETHANE	0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,1,2,2-TETRACHLOROETHANE	0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,1,2-TRICHLOROETHANE	0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,1-DICHLOROETHANE	15.00 ug/l		3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	15.00						
1,1-DICHLOROETHENE	0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,1-DICHLOROPROPENE	0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2,3-TRICHLORO BENZENE	0.00 ug/l	*	8.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2,3-TRICHLOROPROPANE	0.00 ug/l	*	11.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2,4-TRICHLOROBENZENE	0.00 ug/l	*	7.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2,4-TRIMETHYL BENZENE	0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2-DIBROMO-3-CHLORO PROPANE	0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						
1,2-DIBROMOETHANE	0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results from Orchard Hill Landfill: Samp	ole Location OHL from 2/22/96 to 2/22/96
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<u>'arameter</u>		R <u>esult</u>		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
1,2-DICHLOROBENZENE		0.00 ug/l	*	6.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG.	0.00						
1,2-DICHLOROETHANE		0.00 ug/i	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
,2-DICHLOROPROPANE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,3,5-TRIMETHYL BENZENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,3-DICHLOROBENZENE		0.00 ug/l	*	6.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,3-DICHLOROPROPANE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
1,4-DICHLOROBENZENE		0.00 ug/l	*	7.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
2,2-DICHLOROPROPANE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
2-CHLORO TOLUENE		0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
2-NITROPROPANE		0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
4-CHLORO TOLUENE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
4-METHYL 2-PENTANONE		222.00 ug/l		4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	222.00						
ACETONE		4,930.00 ug/l		10.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	4,930.00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results	from Orchard Hill Landfill	: Sample Location OHL from 2	2/22/96 to 2/22/96

<u>arameter</u>		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
ACRYLONITRILE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
ALLYL CHLORIDE		0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG.	0.00						
ARSENIC		19.10 ug/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG.	19.10						
BENZENE		0.00 ug/l	*	3.00 ug/i	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0 00						
BROMOBENZENE		0.00 ug/l	*	6.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
BROMOCHLOROMETHANE		0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
BROMODICHLOROMETHANE	<del></del>	0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
BROMOFORM		0.00 ug/l	*	9.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
BROMOMETHANE		0.00 ug/l	*	8.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CADMIUM		0.00	*	10.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CARBON DISULFIDE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CARBON TETRACHLORIDE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CHLOROACETONITRILE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results from	Orchard Hill Landfill:	Sample Location OHL	. from 2/22/96 to 2/22/96

arameter		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
CHLOROBENZENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CHLOROETHANE		0.00 ug/i	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG <sup>.</sup>	0.00						
CHLOROFORM		0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CHLOROMETHANE		0.00 ug/l	*	7.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CIS-1,2-DICHLOROETHENE		0.00 ug/l	*	3.00 ug/i	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG.	0.00						
CIS-1,3-DICHLOROPROPENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
COD		6,560.00 mg/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	6,560.00						
COPPER		0.00	*	40.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
CYANIDE		0.00	*	20.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
DIBROMOCHLOROMETHANE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
DIBROMOMETHANE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
DICHLOROACETONE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
DICHLORODIFLUOROMETHAN	IE	0.00 ug/l	*	6.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results from Orchard Hill Landfill: Sample Location OHL from 2/22/96 to 2/22/9	Monitoring	results from	Orchard Hill I	Landfill: Sample	e Location OHL	from 2/22/96 to	2/22/96
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<u>arameter</u>		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
DIETHYL ETHER		108.00 ug/l		3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	108.00						
ETHYL METHACRYLATE		0.00 ug/l	*	12.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
ETHYLBENZENE		6.00 ug/l		3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG.	6 00						
HEXACHLOROBUTADIENE		0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
HEXACHLOROETHANE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
IODOMETHANE		0.00 ug/l	*	12.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0 00						
ISOPROPYL BENZENE		0.00 ug/l	*	3.00 ug/t	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
LEAD		3.10 ug/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	3.10						
MERCURY		0.00	*	0.50 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHACRYLONITRILE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYL ACRYLATE		0.00 ug/l	*	9.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYL BUTYL KETONE		20,00 ug/l		6.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	20.00						•
METHYL ETHYL KETONE		9,190.00 ug/l		8.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	9,190.00		J				

<sup>\*</sup> indicates monitoring result below detection limit

# Monitoring results from Orchard Hill Landfill: Sample Location OHL from 2/22/96 to 2/22/96

<u>arameter</u>		Result		Detection Limit	Date	Sample Type	Time	Reason for Analysis
METHYL METHACRYLATE		0.00 ug/l	*	9.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYL-T-BUTYL ETHER		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
METHYLENE CHLORIDE		75.00 ug/l	- · · · · · · · · · · · · · · · · · · ·	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	75.00						
I-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
N-BUTYL CHLORIDE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
N-PROPYL BENZENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
NAPHTHALENE		0.00 ug/l	*	8.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
NICKEL		93.80 ug/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	93.80						
NITROBENZENE		0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
P-ISOPROPYL TOLUENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
PENTACHLOROETHANE		0.00 ug/l	*	5.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0 00						
PROPIONITRILE		0.00 ug/l	*	10.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
SEC-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

Monitoring results from Orchard Hill Landfill: Samp	ple Location OHL from 2/22/96 to 2/22/96
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<u>Parameter</u>		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
SILVER		0.00	*	10.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	0.00						
STYRENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	0.00						
T-1,4-DICHLORO-2-BUTENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	0.00						
T-BUTYL BENZENE		0.00 ug/l	*	4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	0.00						
TETRACHLOROETHENE		0.00 ug/l	*	8.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	0.00						
TETRAHYDROFURAN	_	586.00 ug/l		6.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	586.00						
TOLUENE	_	129.00 ug/l		4.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	129.00						
TOTAL CHROMIUM		124.60 ug/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	124.60						
TOTAL PETROLEUM HYDROCAF	RBON	7.05 mg/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	7.05						
TOTAL PHOSPHORUS		1.22 mg/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
•	AVG:	1.22						
TOTAL SUSPENDED SOLIDS		190.00 mg/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
•	AVG:	190.00						
TRANS-1,2-DICHLOROETHENE		0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
	AVG:	0.00						
TRANS-1,3-DICHLOROPROPENE	:	0.00 ug/l	*	3.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
,	AVG:	0.00						

<sup>\*</sup> indicates monitoring result below detection limit

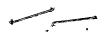
Result 0.00 ug/l	*	Detection Limit 3.00 ug/l	<u>Date</u> 2/22/96	Sample Type GRAB	<u>Time</u> 10:05:00 AM	Reason for Analysis Compliance Monitoring
0.00						,
0.00 ug/l	*	2.00 ug/i	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
0.00						
0.00 ug/l	*	2.00 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
0 00						
20.00 mg/l	·····		2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
20.00						
23.20 ug/l		4.50 ug/l	2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
23.20						
2,025.00 ug/l			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
2,025.00						
6.30 S.U.			2/22/96	GRAB	10:05:00 AM	Compliance Monitoring
6.30						
	0.00 ug/l 0.00 ug/l 0.00 ug/l 0.00 ug/l 0.00 ug/l 0.00 mg/l 20.00 mg/l 20.00 ug/l 23.20 ug/l 23.20 2,025.00 ug/l 2,025.00 s.U.	0.00 ug/l * 0.00  0.00 ug/l * 0.00  0.00 ug/l * 0.00  20.00 mg/l 20.00  23.20 ug/l 23.20  2,025.00 ug/l 2,025.00  6.30 S.U.	0.00 ug/l * 3.00 ug/l 0.00  0.00 ug/l * 2.00 ug/l 0.00  0.00 ug/l * 2.00 ug/l 0.00  20.00 mg/l 20.00  23.20 ug/l 4.50 ug/l 23.20  2,025.00 ug/l 2,025.00  6.30 S.U.	0.00 ug/l * 3.00 ug/l 2/22/96 0.00  0.00 ug/l * 2.00 ug/l 2/22/96 0.00  0.00 ug/l * 2.00 ug/l 2/22/96 0.00  20.00 mg/l 2/22/96 20.00  23.20 ug/l 4.50 ug/l 2/22/96 23.20 2,025.00 ug/l 2/22/96 2,025.00 6.30 S.U. 2/22/96	0.00 ug/l * 3.00 ug/l 2/22/96 GRAB  0.00  0.00 ug/l * 2.00 ug/l 2/22/96 GRAB  0.00  0.00 ug/l * 2.00 ug/l 2/22/96 GRAB  0.00  20.00 mg/l 2/22/96 GRAB  23.20 ug/l 4.50 ug/l 2/22/96 GRAB  2,025.00 ug/l 2/22/96 GRAB  2,025.00  6.30 S.U. 2/22/96 GRAB	Detection Limit   Date   Sumprise   Time   O.00   ug/l   *   3.00   ug/l   2/22/96   GRAB   10:05:00 AM   O.00   Ug/l   *   2.00   ug/l   2/22/96   GRAB   10:05:00 AM   O.00   Ug/l   *   2.00   ug/l   2/22/96   GRAB   10:05:00 AM   O.00   Ug/l   O.00
<sup>\*</sup> indicates monitoring result below detection limit

CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM

PURPOSE OF ANALYSIS: SAMPLERS: 1415 N. Harrison (Signature) 15272 Kalamazoo, Michigan 49007 616-337 8157 DATE/TIME G ITEM SAMPLE NUMBER & SIZE SAMPLE LOCATION, DESCRIPTION Ó SAMPLE LD. NUMBER NUMBER OF CONTAINER м & REMARKS F В Orchard Hill OHL Septic One-1L 10:05 2  $\mathcal{H}$ Land Cill 05396 Station Orchard Hill OHL H One-12 Landfill 05396 RECEIVED E (Signature) Orchard Hill OHL 3 DOR - 12 H Landfill 05396 Orchard Hill Landfill nHL DAR -500ml H 65396 DATE/TIME DATE/TI 3 RELINQUISHED E (Signature) 4 RELINQUISHED E (Signature) DATE/TIME DATE/TIME 7 € GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT Batch: AGR ug/L 6.3 CADMIUM < 10 pН VOC'S TOTAL CHROMIUM BOD 124.6 CBOD HEX. CHROME \_ \_ \_ COD 6560.0 mg/L COD COPPER < 40 METHOD 601 TSS VSS LEAD 3.1 TSS 190.00 mg/L 20.00 mg/L METHOD 602 NICKEL 93.8 VSS METHOD 8015 ZINC 2025.0 METHOD 8260 NH<sub>2</sub>-N DATE/TIME < 10 TOTAL P SILVER PT 1.22 mg/ < 0.5 ORTHO P MERCURY **FORMAL DEHYDE** GREASE/OIL BERYLLIUM PCB'S - TOTAL CHLORIDE BARIUM 2 RELINQUISHED ( (Signature) REMARKS RELINQUISHED CN <20 ppb CN - TOTAL 19.1 ARSENIC OTHER 03/27/96 CN - AMENABLE TPH 7.05 mg/L 03/08/1996 TW

OHL 53



SAMPLE LOCATION: ORCHARD HILL LANDFILL
SAMPLE ID NUMBER: OHL05396
SAMPLE DATE: 2/22/96
ANALYSIS DATE: 2/28/96

Results are in ppm (mg/l) EPA METHOD 624

_, , , , , , , , , , , , , , , , , , ,		
	MDL	
Chloromethane	0 007	Not Detected
Vinyl Chloride	0 002	Not Detected
Bromomethane	0 002	Not Detected
Chloroethane	0 002	Not Detected
		,
Trichlorofluoromethane	0 002	Not Detected
1,1-Dichloroethene	0 003	Not Detected
Methylene Chloride	0 004	0 075
t-1,2-Dichloroethene	0 003	Not Detected
1,1-Dichloroethane	0 003	0 015
Chloroform	0 002	Not Detected
1,1,1-Trichloroethane	0 002	Not Detected
Carbon Tetrachloride	0 003	Not Detected
1,2-Dichloroethane	0 002	Not Detected
Trichloroethene	0 003	Not Detected
1,2-Dichloropropane	0 003	Not Detected
Bromodichloromethane	0 002	Not Detected
c-1,3-Dichloropropene	0 003	Not Detected
t-1,3-Dichloropropene	0 003	Not Detected
1,1,2-Trichloroethane	0 005	Not Detected
Tetrachloroethene	0 008	Not Detected
Dibromochloromethane	0 004	Not Detected
Chlorobenzene	0 003	Not Detected
Bromoform	0 009	Not Detected
1,1,2,2-Tetrachlorethane	0 004	Not Detected
1,4-Dichlorobenzene	0 007	Not Detected
1,3-Dichlorobenzene	0 006	Not Detected
1,2-Dichlorobenzene	0 006	Not Detected
1,2-Dictilotobelizerie	0 000	Not Detected
BTEX COMPOUNDS		
Benzene	0 003	Not Detected
Toluene	0 004	0 129
Ethylbenzene	0 003	0 006
m&p-Xylene	0 006	0 016
o-Xylene	0 003	0 0072
Additional VOCIa by EDA Ma	45-4 0060	
Additional VOC's by EPA Me		Not Detected
	0 006	
Diethyl Ether	0 003	0 108
Acetone	0 010	4 93
lodomethane	0 012	Not Detected
Carbon Disulfide	0 003	Not Detected
Allyl Chloride	0 002	Not Detected
Acrylonitrile	0 003	Not Detected
Methyl -t-Butyl Ether	0 003	Not Detected
2,2-Dichloropropane	0 003	Not Detected
c-1,2-Dichloroethene	0 003	Not Detected
Mathyl Ethyl Katana	0.000	0.10

MDL = METHOD DETECTION LIMIT

Methyl Ethyl Ketone

REPORT SUBMITTED ON 3/7/96 BY

\*O R = OVER RANGE OF CALIBRATION CURVE (Values for these compounds are estimates)

9 19

0 008

IPPFEB96 XLS

SAMPLE LOCATION: ORCHARD HILL LANDFILL
SAMPLE ID NUMBER: OHL05396
SAMPLE DATE: 2/22/96
ANALYSIS DATE: 2/28/96

Results are in ppm (mg/l) EPA METHOD 624

	MDL	
Propionitrile	0 010	Not Detected
Methyl Acrylate	0 009	Not Detected
Bromochloromethane	0 002	Not Detected
Methacrylonitrile	0 004	Not Detected
Tetrahydrofuran	0 006	0 586
n-Butyl Chloride	0 003	Not Detected
1,1-Dichloropropene	0 002	Not Detected
Dibromomethane	0 003	Not Detected
Methyl Methacrylate	0 009	Not Detected
2-Nitropropane	0 005	Not Detected
Chloroacetonitrile	0 004	Not Detected
4-Methyl 2-Pentanone(MIBK)	0 004	0 222
Ethyl Methacrylate	0 012	Not Detected
Dichloroacetone	0 004	Not Detected
1,3-Dichloropropane	0 004	Not Detected
Methyl Butyl Ketone	0 006	0 02
1,2-Dibromoethane	0 004	Not Detected
1,1,1,2-Tetrachloroethene	0 004	Not Detected
Styrene	0 003	Not Detected
Isopropyl Benzene	0 003	Not Detected
1,2,3-Trichloropropane	0 011	Not Detected
Bromobenzene	0 006	Not Detected
t-1,4-Dichloro-2-Butene	0 003	Not Detected
n-Propyl Benzene	0 003	Not Detected
2-Chloro Toluene	0 005	Not Detected
1,3,5-Trimethyl Benzene	0 003	Not Detected
4-Chloro Toluene	0 004	Not Detected
t-Butyl Benzene	0 004	Not Detected
1,2,4-Trimethyl Benzene	0 004	Not Detected
Pentachloroethane	0 005	Not Detected
sec-Butyl Benzene	0 004	Not Detected
p-Isopropyl Toluene	0 003	Not Detected
n-Butyl Benzene	0 004	Not Detected
Hexachloroethane	0 004	Not Detected
1,2-Dibromo-3-Chloro Propane	0 005	Not Detected
Nitrobenzene	0 005	Not Detected
1,2,4-Trichlorobenzene	0 007	Not Detected
Hexachlorobutadiene	0 005	Not Detected
Naphthalene	0 008	Not Detected
1,2,3-Trichloro Benzene	0 008	Not Detected

CITY OF KALAMAZOO CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM DEPARTMENT OF PUBLIC UTILITIES PURPOSE OF ANALYSIS: SAMPLERS: 1415 N Harrison (Signature) 15273 Kalamazoo, Michigan 49007 616 337 8157 DATE/TIME С Ğ ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION Α 0 R SAMPLE I.D. NUMBER NUMBER OF CONTAINER T М М & REMARKS Ε В 0HL Ø5396 Orchard Hill Septic voc's Two-40ml Landfil. ΒΥ: RECEIVED (Signature) RECEIVED E (Signature) DATE/TIME ξ. ΒΥ: 3 RELINQUISHED E (Signature) 4 RELINQUISHED E (Signature) DATE/TIME GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT CADMIUM pΗ VOC'S BOD TOTAL CHROMIUM CBOD HEX. CHROME COD COPPER METHOD 601 TSS LEAD METHOD 602 VSS NICKEL METHOD 8015 NH<sub>3</sub>-N ZINC METHOD 8260 DATE/TIME TOTAL P SILVER ORTHO P MERCURY FORMALDEHYDE BERYLLIUM GREASE/OIL PCB'S - TOTAL CHLORIDE **BARIUM** 2 | RELINQUISHED F | (Signature)

OTHER

ARSENIC

REMARKS

RELINGUISHED

CN - TOTAL

TPH

CN - AMENABLE



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 East Lansing (517) 332-0167 Fax (517) 332-6333 Indianapolis (317) 577-8087 Fax (317) 594-9406

March 30, 1994

Attention: Mr. Nasim Ansari

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

## **Analytical Laboratory Report**

Project: Special Sample

Samples collected by: S. WARR

Date/Time Submitted: 03/14/94 14:00

PO #: 056756

FECL #: AA12394

Tag: 1 Orchard Hill Landfill OHL07394 Date/Time Collected: 03/14/94 09:25

Matrix: Liquid

Container(s): 500 mL Plastic Preservation: NaOH/Refrigeration



Analytical Laboratory Report City of Kalamazoo March 30, 1994

AA12394 FECL #:

TAG:	1 Orchard Hill Landfil	1 OHL07394			
Analysis	Results	Units	MDL	Method	Date
Inorganics Cyanide					
Cyanide	0.09	mg/l	0.01	335.2 Lachat	03/25/94

Note: Methods may be modified for improved performance.

Results reported on a dry weight basis, where applicable.

Violetta F. Murshak Laboratory Director

1. Mushoh)m

	OF KALA	MAZOO OF PUBLIC UTILITIES	CHA	IN OF CUSTO	DY REC	CORD	AND	LAB	<b>ANALYSIS</b>	REPORT FORM		
1415 N	l Harrison azoo, Michiga		SAMPLE (Signate		Dar	R	PUR		OF ANALYSIS:	ample	l	12155
	TEM IMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	D A T E	T I M E	C O M P	G R A B		ATION, DESCRIPTION REMARKS	DATE/TIME	DATE/TIME
	/	orchary fill and fill	04107391	1-500mL	3/14/92	9:25		X	OHL/Cloud	Hy Brown/CN		<del>                                     </del>
	•								,	, ,	RECEIVED BY.	RECEIVED BY: (Signature)
L											DATE/TIME	DATE/TIME
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GEN	ERAL/CC	DNVENTIONAL	RESULT TR	ACE METALS	RES	ULT ORG	ANIC C	СОМРС	OUNDS RESULT		DATE/TIME	DATE/TIME
-	рН			CADMIUM			EPA ME	THOD 6	01	N.	DAT	TAN OA
	BOD			TOTAL CHROMIUM			<b>-</b>		*			74
	CBOD			HEX. CHROME							£ \$	1 2
	COD			COPPER							ED E	
<u></u>	TSS			LEAD					· · · · · · · · · · · · · · · · · · ·		RECEIVED I (Signature)	RECEIVED B (Signature)
	VSS			NICKEL							SIS.	H.S.
	NH <sub>3</sub> -N			ZINC			EPA ME	THOD 6	02		18 SA	IME
	TOTAL P			SILVER								DATE/T
-	ORTHO P			MERCURY							3050	40
	GREASE/			BERYLLIUM							). H	B.∵
<b>\</b>	CN - TOTA			DATION						R KS	HED Y	HED H
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<sup>&#</sup>x27; indicates test results below detection limits

parameter	VALUE	No.	Units	Sample Date	Sample Type	Sample Time
FIHYLBENZENE	38.000	•••		03/14/94		09:25 AM
Mean	38.000					
parameter	VAL UE		Units	Sample Date	Sample Type	Sample Time
LEAD	14.500				GRAB	09:25 AM
Mean	14.500					
parameter	VALUE		Units		Sample Type	Sample Time
MERCURY	0.000	*	ug/1	03/14/94	GRAB	09:25 AM
Mean	0.000					
parameter	VALUE		Units		Sample Type	Sample Time
NICKEL	288.400	•••	ug/l	03/14/94	GRAB	09:25 AM
Mean	288.400					
parameter	VALUE	****	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	77.800	gues.	mg/l	03/14/94	GRAB	09:25 AM
Mean	77.800					
parameter	VALUE		Units		Sample Type	Sample Time
SILVER	0.000	*		03/14/94	GRAB	09:25 AM
Meari	0.000					
	VALUE		Units		Sample Type	Sample Time
1 OL UENE	154.000	****	ug/l	03/14/94		09:25 AM
Mean	154.000					
	VALUE	-	Units		Sample Type	Sample Time
TOTAL FHOS	2.520		mg/l	03/14/94	GRAB	09:25 AM
Mean	2.520					

<sup>\*</sup> indicates test results below detection limits

parameter	VALUE	₩.	Uruits	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	237.500	••••			GRAB '	09:25 AM
Mean	237.500					
parameter	VALUE	••••	Units		Sample Type	Sample Țime
VOLATILE SUS. SOLIDS		***	mg/l	03/14/94	GRAB	09:25 AM
Mean	117.500					
parameter	VALUE				Sample Type	Sample Time
YYLENE	79.000	***	ug/1	03/14/94		09:25 AM
Mean	79.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
ZINC	1005.200	•••		03/14/94		Ø9:25 AM
Mean	1005.200					
parameter	VALUE		Units		Sample Type	Sample Time
pH	8.600	•••		03/14/94		09:25 AM
Mean	8.600					

<sup>&#</sup>x27; indicates test results below detection limits

1415 N. Harrison Kalamazoo, Michigan 49007 616 337 8157 CITY OF KALAMAZOO

DEPARTMENT OF PUBLIC UTILINES Form 1015 GENERAL/CONVENTIONAL ITEM NUMBER GREASE/OIL ZI ZI ZI COD CBOD 멀 CHLORIDE ORTHO P VSS CN - AMENABLE CN - TOTAL TOTAL P SST ナレレ 237.5 7250 6160 Ν SAMPLE I.D .52 \* TPH TSS VSS COD CBOD RESULT SAMPLE NUMBER CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM NH3-9729V SAMPLERS: 04/06/1994 TRACE METALS 77.80 mg/L BUCKEL mg/L 60.0 mg/L CADMIUM .7900 mg/L MERCURY mg/L -Sh Vermg/L BARIUM T/PWINKSia COPPER HEX. CHROME TOTAL CHROMIUM NUMBER & SIZE OF CONTAINER ا ا 12-Apr-94 HOMI 1005.2 288.4 (Ll/gu)  $m \rightarrow D$ 50.0 14.5 30.0 63.1 20.0 394 RESULT 05 ORGANIC COMPOUNDS m **Z** − ~ EPA METHOD OTHER **EPA METHOD 602** ೯೬೦೧ PURPOSE OF ANALYSIS ໝ ≻ ⊐ ຄ 8 SAMPLE LOCATION, DESCRIPTION & REMARKS 6 RESULT **REMARKS:** Jas J 100V RECEIVED BY: (Signature) DATE/TIME DATE/TIME 3 RELINQUISHED BY: RECEIVED BY: DATE/TIME DATE/TIME Nº 12156 3/14 RELINQUISHED BY: (Signature) 10:50 (Signature) (Signature) RECEIVED BY. (Signature) 2 RELINQUISHED BY: 4 RELINQUISHED BY: DATE/TIME DATE/TIME DATE/TIME RECEIVED BY: DATE/TIME (Signature) (Signature) (Signature)

ΤW

## City of Kalamazoo Trace Organics Laboratory Report

Sample Location: ORCHARD HILL LANDFILL

Sample ID number: OHL 07394
Sample Date: 3-14-94
Date Received in Lab: 3-14-94
Analyst: JWB
Analysis Date: 3-15-94

#### Purgeable Halocarbons

	Results	Units	MDL	Method
Bromodichloromethane	Not detected	mg/l	0.001	601
Bromoform	Not detected	mg/l	0.001	601
Bromomethane	Not detected	mg/l	0.001	601
Carbon Tetrachloride	Not detected	mg/l	0.001	601
Chlorobenzene	Not detected	mg/l	0.001	601
Chloroethane	Not detected	mg/l	0.001	601
2-Chloroethylvinylether	Not detected	mg/l	0.001	601
Chloroform	Not detected	mg/l	0.001	601
Chloromethane	Not detected	mg/l	0.001	601
Dibromochloromethane	Not detected	mg/l	100.0	106
1,2-Dichlorobenzene	Not detected	mg/l	0.001	601
1,3-Dichlorobenzene	Not detected	mg/l	0.001	601
1.4-Dichlorobenzene	Not detected	mg/l	0.001	601
Dichlorofluoromethane	Not detected	mg/l	0.001	601
1,1-Dichloroethene	Not detected	mg/l	0.001	601
1,2-Dichloroethane	Not detected	mg/l	0.001	601
1,1-Dichloroethane	Not detected	mg/l	0.001	601
cis-1,2-Dichloroethene	Not detected	mg/l	0.001	601
trans-1,2-Dichloroethene	Not detected	mg/l	0.001	601
1,2-Dichloropropane	Not detected	mg/l	0.001	601
cis-1,3-Dichloropropene	Not detected	mg/l	0.001	601
trans-1,3-Dichloropropene	Not detected	mg/l	0.001	601
Methylene Chloride	Not detected	mg/l	0.001	601
1,1,2,2-Tetrachloroethane	Not detected	mg/l	0.001	601
Tetrachloroethene	Not detected	mg/l	0.001	601
1,1,1-Trichloroethane	Not detected	mg/l	0.001	601
1,1,2-Trichloroethane	Not detected	mg/l	0.001	601
Trichloroethene	Not detected	mg/l	0.001	601
Trichlorofluoromethane	Not detected	mg/l	0.001	601
Vinyl Chloride	Not detected	mg/l	0.001	601

#### **Purgeable Aromatics**

	Results	Units	MDL	Method
Benzene	.023	mg/l	0.001	602
Ethylbenzene	.038	mg/l	0.001	602
Toluene	.154	mg/l	0.001	602
m&p-Xylene	.036	mg/l	0.001	602
0-Xylene	.043	mg/l	0.001	602

MDL = Method Detection Limit

Report Date: 3/22/94

## GREASE ND OIL, FREON EXTRACTION Gravimetric Method

Date Analyzed 03/24	/ 9.4 Sa		148 0689				
AnalystTC			<u> </u>	- 7			
Gms. Flask+Residue	134.108			TW			
Gms. Flask 5	134.052						
Gms. G & O	0.056	X 1000	= 56.0	Mgs.			
Sample Volume in mLs	720	÷ 1000	= 6.72	L.			
Mgs/Volume in L.	56.0	= 77.8	mg/L G & O				
Analyst							
Gms. Flask							
Gms. G & O		X 1000	=	Mgs.			
Sample Volume in mLs		÷ 1000	=	L.			
Mgs/Volume in L.		=	mg/L G & O				
Date Analyzed / / Sample ID #							
Gms. Flask+Residue							
Gms. Flask							
Çirini. • O		-X-1000	c	Mgs.			
Sample Volume in mis		÷ 1000	· =	L.			
Mgs/Volume in L.		=	mg/L G & (	D.			

parameter	VALUE		Units		Sample Type	
AMMONIA-NITROGEN	958.000				GRAB	10:17 AM
Mean	958.000					
parameter	VALUE	-		Date	Sample Type	Sample Time
ARSENIC	31.300	~			GRAB	10:17 AM
Mean	31.300					
parameter	VALUE			Date	Sample Type	Time
CADMIUM	0.400				GRAB	10:17 AM
Mean	0.400					
parameter	VALUE		Units	Date	Sample Type	Tire
CBOD 5-DAY	4830.000				GRAB	10-17 AM
Mean	4830.000					
parameter	VALUE				Sample Type	Time
CHROMIUM	58.900				GRAB	10:17 AM
Mean	58.900					
parameter	VALUE		Units	Sample Date		Sample Time
COD	9160.000	_	mg/l	02/03/93	GRAB	10:17 AM
Mean	9160.000					
parameter	VALUE	-		Sample Date	Sample Type	Sample Time
COPPER	204.000	-			GRAB	10:17 AM
Mean	204.000					
parameter	VALUE		Units		Sample Type	Sample Time
CYANIDES					GRAB GRAB	10:17 AM 01:47 PM
Mean	150.000					

indicates test results below detection limits

parameter	VALUE				Sample Type	Sample Time
LEAD				02/03/93	,	10:17 AM
Mean	13.700					
parameter	VALUE			Date	Sample Type	Sample Time
MERCURY					GRAB	10:17 AM
Mean	0.000					
parameter	VALUE			Date	Sample Type	
NICKEL					GRAB	10:17 AM
Mean	896.000					
parameter	VALUE	_	Units	Date	Sample Type	
OIL & GREASE	136.000					10:17 AM
Mean	136.000					
parameter	VALUE				Sample Type	
SILVER	0.000				GRAB	10:17 AM
Mean	0.000					
parameter	VALUE				Sample Type	Sample Time
TOTAL PHOS					GRAB	10:17 AM
Mean	1.680					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS						
Mean	398.000					
banet firm	VALUE	- 198 <b>-</b>	Units	Sample Date		Sample
VOLATILE SUS. SOLIDS	152.000					10:17 AM
Mean	152.000					

<sup>\*</sup> indicates test results below detection limits

parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
ZINC	2242.000	***	ug/l	02/03/93	GRAB '	10:17 AM
Mean	2242.000					
parameter	VALUE	~	Units	Sample Date	Sample Type	Sample Time
рн	8.300	_	s.u.	02/03/93	GRAB	10:17 AM

<sup>\*</sup> indicates test results below detection limits

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO 10065 No DEPARTMENT OF PUBLIC UTILITIES **SAMPLERS** PURPOSE OF ANALYSIS (Signature) 1415 N Harrison Kalamazoo, Michigan 49007 616 385 8157 E/TIME SAMPLE LOCATION, DESCRIPTION **NUMBER & SIZE** ITEM SAMPLE R Α 0 SAMPLE ID. NUMBER NUMBER OF CONTAINER М М & REMARKS Ochard Hill 044 2pi40 r Brown Metals 03493 10.17M LANDFILL OHL One-1L 03493 RECEIVED ( (Signature) RECEIVED (Signature) 046 3 03493 044 03493 DATE/TIME B В 3 RELINQUISHED E (Signature) 4 RELINQUISHED F (Signature) DATE/TIME

2 12:4

343 PM DATE/TIME GENERAL/CONVENTIONAL **RESULT** TRACE METALS RESULT ORGANIC COMPOUNDS RESULT SV (uq/L)Grab CADMIUM 0.4 EPA METHOD 601 рΗ SR 58.9 BOD TOTAL CHROMIUM 4830 CBOD HEX CHROME \_\_\_\_ COD COPPER 204.0 tA Ken LEAD 13.7 TSS VSS NICKEL 896.0 ZINC 2242.0 EPA METHOD 602 NH<sub>3</sub> N DATE/TIME TOTAL P SILVER 0.5 < ORTHO P MERCURY 0.5 < 136 BERYLLIUM GREASE/OIL ΒY CHLORIDE BARIUM REMARKS RELINQUISHED (Signature) 869.7ppb (Interference) 31.3 Arsenic 2 RELINQUIS (Signature) OTHER 23-Feb-93

Form 1015



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr., Suite 222 East Lansing, MI 48823 (517) 332-0167 FAX (517) 332-6333 Indianapolis (317) 577-8087 FAX (317) 594-9406

February 23, 1993

City of Kalamazoo 1415 N Harrison Kalamazoo, MI 49007

Attention. Mr Nasım Ansarı

## **Analytical Laboratory Report**

FECL #: AA01203

Samples collected by S Rochow Analyses requested by N. Ansarı Date/time samples submitted 02-18-93 9 06 am PO # 056756

Submitting Company: City of Kalamazoo 1415 N Harrison

1415 N Harrison Kalamazoo, MI 49007

Project Description: Cyanide

Samples Collected

FECL #: AA01203

Tag · 1 Orchard Hill Landfill OHL 04693

Container Plastic Sample type. Liquid Preservative: NaOH

Sampling date/time 02-15-93 1 47 pm



Analytical Laboratory Report City of Kalamazoo FECL #: AA01203 February 23, 1993 Page 2 of 2

FECL #: AA01203

Tag: 1 Orchard Hill

Landfill OHL 04693

Conventional - Method 335.2

Cyanıde 0.14 mg/l

V. F Mushelips Violetta F. Murshak Laboratory Manager

VFM/ajc



Page 1 of 1

## Analytical Support Data Sheet

Client: City of Kalamazoo	
FECL #: AA01203	
Analyses: <u>Cyanide</u>	
Preparation Method: N/A	
Date of Preparation: N/A	
Analyst: N/A	
Analytical Method: 335.2	
Date of Analyses: 02-22-93	
Analyst: J. Phifer	

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO No 10124 DEPARTMENT OF PUBLIC UTILITIES SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 616-385-8157 DATE/TIME G С NUMBER & SIZE SAMPLE LOCATION, DESCRIPTION ITEM SAMPLE ŏ Ř Α SAMPLE I.D. М NUMBER NUMBER OF CONTAINER М & REMARKS В E orchard OHL 12913 orchard OHL O4693 - 500ml ΒΥ: ΒY RECEIVED E RECEIVED E (Signature) DATE/TIME ВY: ₹. 4 | RELINQUISHED E | (Signature) 3 RELINQUISHED E (Signature) DATE/TIME 35.75 DATE/TIME 1 GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT KWRP Septage hauler Station CADMIUM рН EPA METHOD 601 BOD TOTAL CHROMIUM CBOD HEX CHROME ВY: procedur RECEIVED E COD COPPER TSS LEAD VSS NICKEL **EPA METHOD 602** NH<sub>3</sub>-N ZINC がか TOTAL P SILVER Distilla tion ORTHO P **MERCURY** GREASE/OIL **BERYLLIUM** ВY: CHLORIDE BARIUM REMARKS: RELINQUISHED CN - TOTAL Los CN - AMENABLE OTHER



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr , Suite 222 East Lansing, MI 48823 (517) 332-0167 FAX (517) 332-6333 Indianapolis (317) 577-8087 FAX (317) 594-9406

February 17, 1993

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attention: Mr. Nasim Ansari

## **Analytical Laboratory Report**

FECL #: AA00893

Samples collected by: S. Rochow Analyses requested by: N. Ansari

Date/time samples submitted: 02-04-93 12:43 pm

PO #: 056756

Submitting Company: City of Kalamazoo

1415 N. Harrison Kalamazoo, MI 411517

Project Description: Compliance Monitoring

Samples Collected:

FECL #: AA00893

Tag: 1 Orchard Hill Landfill OHL 03493

Container: Glass Vials Sample type: Liquid Preservative: None

Sampling date/time: 02-03-93 1017 hrs



Analytical Laboratory Report City of Kalamazoo FECL #: AA00893 February 17, 1993 Page 2 of 3

FECL #: AA00893

Tag: 1 Orchard Hill

Landfill OHL 03493

#### Purgeable Halocarbons - Method 601

1,1,1-Trichloroethane <0.001 mg, 1,1,2-Trichloroethane <0.001 mg, Trichloroethene <0.001 mg, Vinyl chloride <0.001 mg,
---



Analytical Laboratory Report

City of Kalamazoo FECL #: AA00893 February 17, 1993 Page 3 of 3

FECL #: Tag:

AA00893

1 Orchard Hill

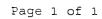
Landfill OHL 03493

#### Purgeable Aromatics - Method 602

Benzene	0.041	mg/l
Ethylbenzene	0.052	mg/l
Toluene	0.414	mg/l
p,m-Xylene	0.122	mg/l
o-Xylene	0.059	mg/l

if f. illushalipen Violetta F. Murshak Laboratory Manager

VFM/ajc





## Analytical Support Data Sheet

Client: City of Kalamazoo
FECL #: AA00893
Analyses: Purgeable Halocarbons & Aromatics
Preparation Method: N/A
Date of Preparation: N/A
Analyst: N/A
Analytical Method: 601/602
Date of Analyses: 02-17-93
Analyst: J. Blaszczyk

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO No 10066 DEPARTMENT OF PUBLIC UTILITIES SAMPLERS: PURPOSE OF ANALYSIS 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 616 385-8157 DATE/TIME D G С ITEM SAMPLE NUMBER & SIZE SAMPLE LOCATION, DESCRIPTION A Ō SAMPLE I.D. ũ NUMBER NUMBER OF CONTAINER м м & REMARKS F F Brown rchard Hill LAND Lift 03493 Two-40ml 493 VOC ξ RECEIVED (Signature) RECEIVED E DATE/TIME DATE/TIME В В 3 RELINQUISHED E (Signature) 4 RELINQUISHED E (Signature) GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT Нq CADMIUM FPA METHOD 601 BOD TOTAL CHROMIUM CBOD HEX CHROME RECEIVED E COD COPPER TSS LEAD VSS NICKEL EPA METHOD 602 NH<sub>3</sub>-N ZINC DATE/TIME MDNR Scan 1 = 2 TOTAL P SILVER ORTHO P MERCURY GREASE/OIL BERYLLIUM В В CHLORIDE BARIUM i 1 RELINQUISHED E (Sj**gg**ature) REMARKS CN TOTAL CN . AMENABLE OTHER

## GREASE A.J OIL, FREON EXTRACTION Gravimetric Method



Date Analyzed 29-9	3 Sar	mple ID #_Of	tL03493		•
Analyst			_		
Gms. Flask+Residue	151.8342	•			
Gms. Plask	151,7221				
Gms. G & O	.1121	X 1000	= 112.1	Mgs.	
Sample Volume in mLs	825	÷ 1000	= 0.925	L.	
Kgs/Volume in L.		= 135.9	mg/L G & O		-
Date Analyzed	Sa	mple ID #			
Analyst					
Gms. Plask+Residue					
Gms. Flask					
Gms. G & O		X 1000	=	Mgs.	
Sample Volume in mLs		÷ 1000	=	L.	
Mgs/Volume in L.		⊏ '	mg/L G & O		
Date Analyzed	88	ample ID #_			
Analyst				•	
Gms. Flask+Residue					
Gms. Flask			•		
G#a.* . G. & Ö.		X 1000:	: -:	Mgs.	
Sample Volume in mis		÷ 1000	=	L.	
Mgs/Volume in L.		=	ma/I. G & O		1

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CHAIN OF CUSTODY RECORD AND LAB ANALYSIS HERURI FURIN No

8663

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES No 8664 PURPOSE OF ANALYSIS: SAMPLERS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 616-385-8157 DATE/TIME C G. ITEM **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION SAMPLE R A T SAMPLE I.D. NUMBER NUMBER М & REMARKS OF CONTAINER М Α Ε Ε B Orchard Hill OHL 3/12/92 11:30 M Two-40m1 VOC FI/ Landfill 07292 RECEIVED E (Signature) RECEIVED E Orchard OHL FX2 07292 DATE/TIME DATE/TIME ₽. 3 RELINQUISHED E (Signature) 4 RELINQUISHED I (Signature) 1.20 an DATE/TIME DATE/TIME GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT рН CADMIUM EPA METHOD 601 BOD TOTAL CHROMIUM Item #1: VOC MDNR Scan 1:2 CBOD HEX. CHROME RECEIVED BY: (Signature) COD COPPER LEAD TSS NICKEL VSS ZINC EPA METHOD 602 NH<sub>2</sub>-N DATE/TIME Item#2: PCB TOTAL P SILVER ORTHO P MERCURY GREASE/OIL BERYLLIUM ΒΥ: CHLORIDE BARIUM REMARKS: RELINQUISHED CN - TOTAL **CN - AMENABLE** OTHER



# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr Suite 222 East Lansing MI 48823 (517) 332-0167 FAX (517) 332-6333 Indianapolis (317) 879-0913 FAX (317) 879-0914

March 23, 1992

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attention: Mr. Nasim Ansari

### Analytical Laboratory Report

FECL #: 8971-92-E1

Samples collected by: S. Kuilema Analyses requested by: N. Ansari

Date/time samples submitted: 03-16-92 1:00 pm

PO #: 055518

Submitting Company: City of Kalamazoo

1415 N. Harrison

Kalamazoo, MI 49007

Project Description: Compliance Monitoring

Samples Collected:

FECL #: 8971-92-E1

Tag: 1 & 2 Orchard Hill

Landfill OHL 07292 Container: Glass Vials/Jar

Sample type: Liquid

Sampling date/time: 03-12-92 11:30 am



Analytical Laboratory Report

City of Kalamazoo FECL #: 8971-92-E1 March 23, 1992 Page 2 of 3

FECL #:

8971-92-E1

Tag:

1 & 2 Orchard Hill

Landfill OHL 07292

### Method 624 - Purgeable Halocarbons

Bromodichloromethane	<0.001	mg/l
Bromoform	<0.001	mg/l
Bromomethane	<0.001	mg/l
Carbon tetrachloride	<0.001	mg/l
Chlorobenzene	<0.001	mg/l
Chloroethane	<0.001	mg/l
2-Chloroethylvinyl ether	<0.001	mg/l
Chloroform	<0.001	mg/l
Chloromethane	<0.001	mg/1
Dibromochloromethane	<0.001	mg/l
1,2-Dichlorobenzene	<0.001	mg/l
1,3-Dichlorobenzene	<0.001	mg/l
1,4-Dichlorobenzene	0.015	mg/l
Dichlorodifluoromethane	<0.001	mg/l
1,1-Dichloroethane	<0.001	mg/l
1,2-Dichloroethane	0.030	mg/l
1,1-Dichloroethene	<0.001	mg/l
t-1,2-Dichloroethene	<0.001	mg/l
1,2-Dichloropropane	<0.001	mg/l
c-1,3-Dichloropropene	<0.001	mg/l
t-1,3-Dichloropropene	<0.001	mg/l
Methylene chloride	<0.001	mg/l
1,1,2,2-Tetrachloroethane	<0.001	mg/l
Tetrachloroethene	<0.001	mg/l
1,1,1-Trichloroethane	<0.001	mg/l
1,1,2-Trichloroethane	<0.001	mg/l
Trichloroethene	<0.001	mg/l
Trichlorofluoromethane	<0.001	mg/l
Vinyl chloride	<0.001	mg/l



Analytical Laboratory Report

City of Kalamazoo FECL #: 8971-92-E1 March 23, 1992 Page 3 of 3

FECL #: 8971-92-E1

Tag: 1 & 2 Orchard Hill

Landfill OHL 07292

#### Method 624 - Purgeable Aromatics

Benzene	0.038  mg/l
Ethylbenzene	0.072  mg/l
Toluene	0.270  mg/l
p,m-Xylene	0.132  mg/l
o-Xylene	0.058  mg/l

#### Method 608 - Organic

PCB <0.0001 mg/l

Violetta F. Murshak Laboratory Manager

1/ F Mushak/na

VFM/cqv



Analytical Support Data Client: City of Kalamazoo

TAG: 1 & 2 Orchard Hill Landfill OHL 07292

FECL#: 8971-92-E1 March 23, 1992 Page 1 of 1

#### Purgeable Halocarbons

Analytical Method:

624

Date of Analysis:

3-17-92

Analyst:

J. Blaszczyk

Sample Size:

5ml

Dilution Factor:

1.0

#### Purgeable Aromatics

Analytical Method:

624

Date of Analysis:

3-17-92

Analyst:

J. Blaszczyk

Sample Size:

5ml

Dilution Factor:

1.0

#### PCBs.

Preparation Method:

3510

.

Analytical Method: Date of Analysis: 608 3-21-92

Date of Preparation: Analyst:

3-19-92 S. Gliga

Analysist:

D. Edelman

Sample Size:

850ml

Dilution Factor:

1.0

SAMPLE ID	OHLO	12-92		
DISH D.	ARAB 4	55 4		
WT.DISH&S	DL. 249259	250540		Analyst Kn
WT.DISH	249145	250476	(356)	Date Analyzed 3-13-92
MG/L SOL	456 114	256		
WT.DISH&S	DL. 249259	250540		
WT.DISH&A	SH 249230	250517		
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## GREASE AND OIL, FREON EXTRACTION Gravimetric Method

Date Analyzed 3-17-9	<u>")</u> Sa	mple ID #_C	HL 0/292		•
Analyst SB					
Gms. Flask+Residue	130.8205				
Gms. Flask	130.5014				(10)
Gms. G & O	0.3191	X 1000	= 319.1	Mgs.	
Sample Volume in mLs	875	÷ 1000	= 0.875	L.	
Mgs/Volume in L.		= 364.7	mg/L G & O		,
Date Analyzed	Sa	mple ID #			
Analyst					
Gms. Flask+Residue					
Gms. Flask					
Gms. G & O		X 1000	E	Mgs.	
Sample Volume in mLs		÷ 1000	=	L.	
Mgs/Volume in L.		E '	mg/L G & O		
Date Analyzed Analyst		ample ID #_			
Gms. Flask+Residue					
Gms. Flask			•		
Gras G &. O.		X 1000	. =	Mgs.	
Sample Volume in mle		÷ 1000	=	L.	
Mgs/Volume in L.		=	mg/L G & (	).	

Reviewed	by:	BOD

Date Completed: 0 2-05-98

## City of Kalamazoo **Minor Industrial User Inspection Form**

#### Background Information:

#### Orchard Hill Landfill

Mailing Address: 3378 Hennesy Road Watervliet MI 49098 Site Address: 3378 Hennesy Road Watervliet MI 49098

Contact Person:

Mr. Ralph O. Balkema

Phone: (616) 463-5588

Title:

**Construction Supervisor** 

Fax:

#### Inspection Information:

Inspector: Sandy Kuilema, IPP Inspector

Type of Inspection:

Scheduled

Inspection Date: 10/24/97

9:00 AM Inspection Time:

Reason for Inspection:

Annual

Observations: To get to facility: Take I-94 west and exit at the Watervliet/Niles exit. Turn left and travel south to Dan Smith Road. Turn right and drive west to Hennessy (the landfill is right there). Turn left to get to drive of Landfill.

1.) Nature of Business:

Type II Landfill

- 2.) Leachate is hauled in 8,300 gallon tanker trucks to the Kalamazoo Water Reclamation Plant and discharged at the septage hauler station. Wastewater is manifested but is classified non-hazardous.
- 3.) Leachate is not being treated prior to hauling to KWRP. If problems develop with sampling results, Ralph will initiate treating leachate through their treatment system.

Backgroundnotes:

#### General Facility Information:

#### Description of Process(es) at facility inspected (see attachments if applicable):

Landfill leachate is collected and pumped to a Raw Waste Tank. If the leachate needs metal removals, the flow is directed through the waste treatment system. Sodium Hydroxide is added to raise the pH, then calcium chloride is added for flocculation and polymer is added for sedimentation of the heavy metals. The flow enters the clarifiers, the solids settle to the bottom, plate pressed, mixed with cement and disposed in the landfill. The supernate then flows to the Final Effluent Tank and is hauled to the City of Kalamazoo's wastewater treatment plant. If the leachate does not need metal removal, the leachate is discharged directly into the Final Effluent Tank.

Page: Date: 10/24/97

Numb	er of Employees :		7					
Sic	Code(s):		Schedule of Ope	eration:	10 Hours/Day		5 Days/V	Veek
					1 Shifts/Day		12 Month	hs/Year
Was	tewater Flows:		/astewater Flow:	GPD	Avg		GPD Max	
		Total Was	tewater Flow:	8,300	GPD Avg		24,000 GPE	) Max
Туре	es of Waste(s) disc	charged to	the system:		Deduct Meters			
į.	anitary:		0		Deduct Weters	_		
	ocess Water:		8,300					
	ash Water:							
Ri	inse Water:							
Co	ooling Water/NCC	W:						
Sc	rubber Water:							
						•		
How	are waste flows n	neasured?	Number of Tru	icks				
Wate	er Supply (monthly	y average):	Municipal :	<u> </u>	Well :		Other :	
<u> </u>			municipal				Other . L	
<u>Notes</u>	: Orchard Hill La	ındfill is ha	nd billed with nun	nber of t	rucks (8,300 ga	llons per	truck)	
<b>Wastewate</b>	r Treatment F	acility:						
Is there p	retreatment at the	facility?	Yes	Type	of pretreatment	<u>:</u>	Batc	:h
<u>Descripti</u>	on of pretreatmen		val of heavy meta ide and sedimenta					
<u>Design fl</u>	ow for Treatment	system :	25 gpm					
Are all ur	nits of system in s	ervice?	Yes					
Hazardou	ıs Waste Info	rmation:						
Are any RO	CRA hazardous wa	astes gene	rated?: No		<u>Is a Waste Hau</u>	ler used?	Yes	
	Hau	ıler Name			Hauler ID		Generator	r Number
Balkema					MIG00000135	1	M1G000	001351
	Attach c	opies of an	y waste manifest	s from the	nis facility for th	e last 12	months.	
	US EPA Nu	mber	Hazard	ous Wa	ste from Nonsp	ecific Sou	irces	
		Di	sposal Facility				ID#	
	Kalamazoo Wate					MIP	000000450	
						<u> </u>		

Notes: Orchard Hill Landfill's leachate is hauled by Balkema to the Kalamazoo Water Reclamation Plant in a 8,300 gallons tanker truck.

Date: 10/24/97 Page: 2

### Chemical/Waste Storage Areas:

Is there Chemical/Waste storage on site?

Yes

Quantity

Are containers clearly labeled?

Type of storage

Yes

Are incompatibles stored separately? N/A

Bulk Chemicals/Wastes on site

Are these Chemicals/Wastes stored within a spill contained area of the plant?

Yes

Are any of these Chemicals/Wastes on the Critical Materials List?

Yes

On an attached sheet, provide a sketch of storage areas. (Sketch should include locations of Chemicals/Wastes within storage area, floor drains or other outfalls to sanitary sewer system.)

Notes: Facility not connected to the sanitary sewer.

#### Sampling Points:

Are sampling locations in an Appropriate place to get representative samples of regulated streams?

Yes

Can we measure flow or do we have a verifiable estimate of total flow to the sample point?

Yes

Are sampling points accessible to both the Control Authority and the facility?

Yes

Indid		Samplelocation
OHL	Hauled waste prior to or during	discharge at the Kalamazoo Water Reclamation
	Plant	

#### Other Items:

Describe the physical characteristics of the watestream in the sanitary sewer which is emanating from the Industrial User:

Brown/black colored leachate

How is the facility generally maintained?

Good

Attachment1:

**Treatment System Schematic** 

Attachment2:

Site Map

Attachment3:

Attachment4:

Attachment5:

Date: 10/24/97 Page: 3

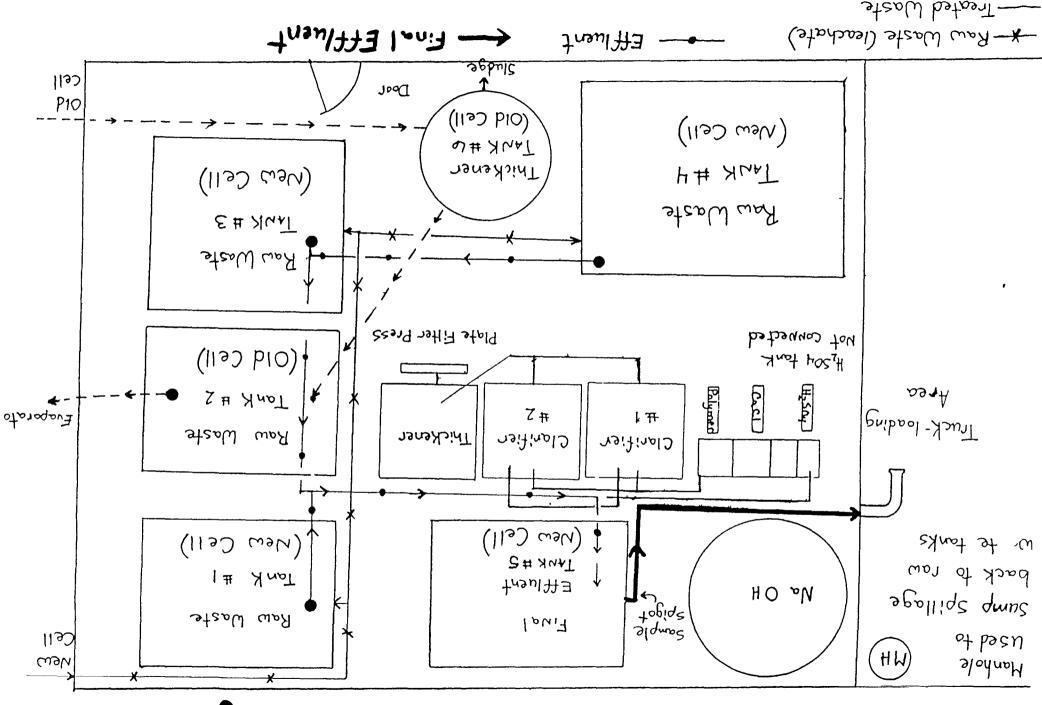
Items:

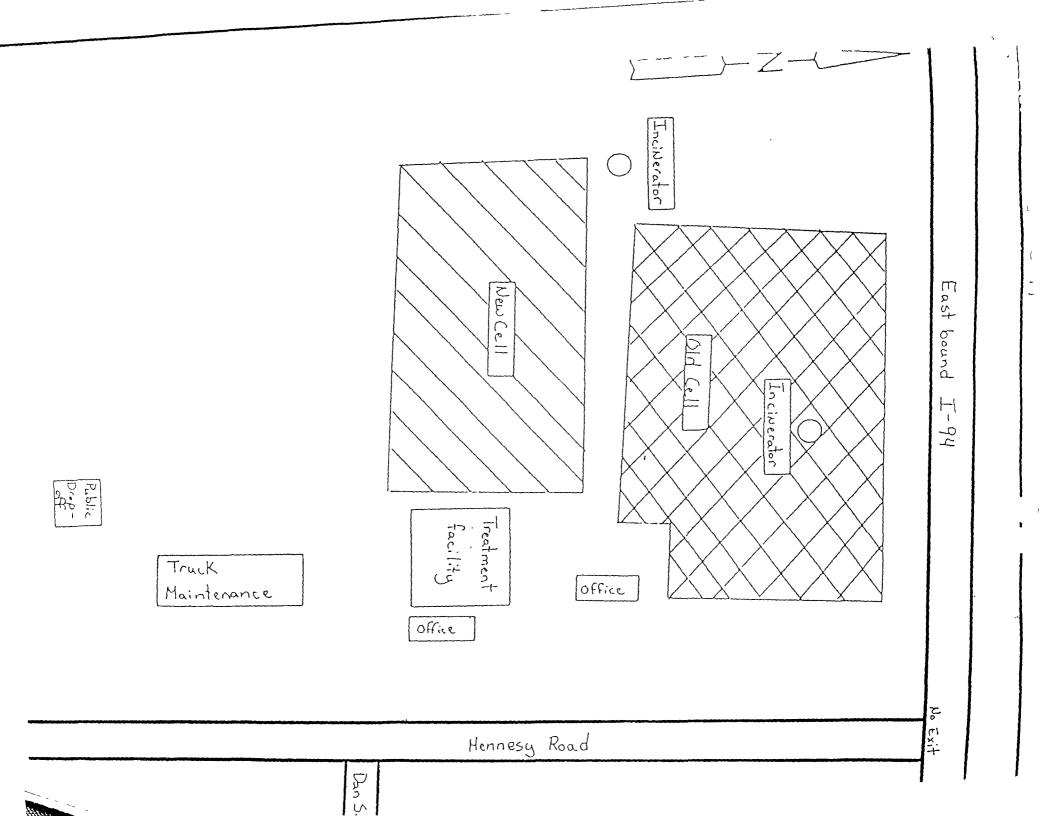
Orchard Hill Landfill is separating leachate based on which cell it comes from. The old cell leachate has traces of PCB's. Leachate from the old cell and some from the new is being evaporated on-site. The leachate from the new cell is being discharged directly to the Final Effluent Tank from raw waste tanks #1, #3 and #4. The metals treatment system is presently not being used because the concentration levels of the metals are in compliance with our local limits. If the concentration of the metals increases, the system will be brought back on line. The old cell leachate is being discharged into tank #6 (Thickener) with the supernate being discharged to Raw Waste Tank #2. The sludge is re-landfilled. The leachate from the Raw Waste Tank #2 is evaporated.

Late 1995, Orchard Hill Landfill had some zinc violations. These violations were traced back to the new Raw Waste Tank #3 and #4. They have galvinized liners and fittings which leach into the wastewater and caused the violation. The metals treatment system was not operating at that time. Ralph Balkema feels that the tanks have leached out the expendable zinc. Resampling has shown this theory to be correct. Follow up metal samples should be taken to monitor the levels of the metals in the leachate.

Date: 10/24/97 Page: 4

## Orchard Hill Landfill - Treatment System





## City of Kalamazoo Industrial User Inspection Form

1 eViewed 3-13-96 300

#### **Background Information:**

#### Orchard Hill Landfill

Mailing Address: 3378 Hennesy Ro

3378 Hennesy Road Watervliet Mi 49098 Site Address:

3378 Hennesy Road Watervliet Mi 49098

Contact Person:

Mr. Ralph O. Balkema

Phone: (616) 463-5588

Title:

**Construction Supervisor** 

Fax:

#### Inspection Information:

Inspector: Steve Rochow, IPP Inspector

Type of Inspection:

Scheduled

Inspection Date: 3/12/96

Inspection Time: 9:00:00 AM

Reason for Inspection:

Annual

Observations: 1.) Nature of Business: Type II Landfill

2.) Leachate is hauled in a 8,300 gallons tanker truck to the Kalamazoo Water Reclamation Plant and discharged at the septic hauler station. Wastewater is manifested but is classified non-hazardous.

Notes:

#### **General Facility Information:**

Description of Process(es) at facility inspected (see attachments if applicable):

Landfill leachate is collected and pumped to a Raw Waste Tank. If the leachate needs metal removals, the flow is directed through the waste treatment system. Sodium Hydroxide is added to raise the pH, then calcium chloride is added for flocculation and polymer is added for sedimentation of the heavy metals. The flow enters the clarifiers, the solids settle to the bottom, plate pressed, mixed with cement and disposed in the landfill. The supernate then flows to the Final Effluent Tank and is hauled to the City of Kalamazoo's wastewater treatment plant. If the leachate does not need metal removal, the leachate is discharged directly into the Final Effluent Tank.

Number of Employees: 7

Sic Code(s):

Schedule of Operation:

10 Hours/Day 1 Shifts/Day 5 Days/Week

1

12 Months/Year

Wastewater Flows:

Process Wastewater Flow:

GPD Avg

**GPD Max** 

Total Wastewater Flow:

8,300 GPD Avg

24,000 GPD Max

Date: 3/12/96 Page: 1

		ed to the system:		
	Sanitary:	0	Deduct Meters:	
	Process Water:	8,300		
	Wash Water:			
!	Rinse Water:			
1	Cooling Water/NCCW:			
1	Scrubber Water:			
ļ	How are waste flows measu Water Supply (monthly aver			
ļ		Widinespai .	Well: Oth	ner:
	is a Categorical Industrial Use	er? No	Monitoring Location OHL	CFR#
_				
	is a Significant Industrial Use eria for this determination:			
-	Is the Industrial User subject	t to any of the following	g? Is current system adequate/r	epresentative?
	Combined Wastestream F	ormula : No		
	Production-based Catego			
	Total Toxic Organic (TTO)			
	_ ,			
ì	Solvent Management Plan	is or TOMP: No		
	Solvent Management Plan	IS OF TOMP: NO		
No			er of trucks (8,300 gallons per truck	)
<u> </u>		hand billed with number	er of trucks (8,300 gallons per truck	)
tewa	otes: Orchard Hill Landfill is	hand billed with number	er of trucks (8,300 gallons per truck	)
tewa	otes : Orchard Hill Landfill is	hand billed with number	er of trucks (8,300 gallons per truck  Type of pretreatment:	) Batch
tewa	otes: Orchard Hill Landfill is  ater Treatment Facility:  ere pretreatment at the facility  cription of pretreatment: Re	hand billed with numbers		Batch tion with Calcium
ls th	otes: Orchard Hill Landfill is  ater Treatment Facility:  ere pretreatment at the facility  cription of pretreatment: Re Ch	hand billed with numbers	Type of pretreatment :  pH adjustment with NaOH, floccula	Batch tion with Calcium
ls th	otes: Orchard Hill Landfill is  ater Treatment Facility:  ere pretreatment at the facility  cription of pretreatment: Re Ch	hand billed with number of the second sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is the sedimentation in the sedimentation in the sedimentation is sedimentation. The sedimentation is se	Type of pretreatment: pH adjustment with NaOH, floccula on with polymer and the sludge is p	Batch tion with Calcium
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ls th  Desc  Type Are  Des	otes: Orchard Hill Landfill is  ater Treatment Facility:  ere pretreatment at the facility  cription of pretreatment: Re Ch  es of wastes treated: landfill  wastewaters that bypass treater	hand billed with number of Yes  moval of heavy metals: loride and sedimentation is leachate timent system adequate : 25 gpm	Type of pretreatment: pH adjustment with NaOH, floccula on with polymer and the sludge is p	Batch tion with Calcium late pressed.
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Date: 3/12/96 Page: 2

	Hauler Name		Hauler ID	Generator Numb	er
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	Attack and a second		41 to Fo 1994 For the Local	40	
			this facility for the last		
	US EPA Number	Hazardous W	aste from Nonspecific	Sources	
	Disp	posal Facility		ID#	
	Kalamazoo Water Reclamatio	on Plant		MIP00000450	
Notes :	Orchard Hill Landfill's leacha	te is hauled by Balken	na to the Kalamazoo W	/ater Reclamation Plan	t in
	a 8,300 gallons tanker truck.	·			
L		<del></del>		<del></del>	
nical/V	Vaste Storage Areas:				
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When?

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Has this facility been responsible for any slug discharges or spills since the last inspection date?

Is there secondary containment for materials on the Critical Materials List?

Yes

No

Notes: December of 1994, Orchard Hill Landfill discharged PCB's to the Wastewater Treatment Plant. Hauling of waste loads were discontinued. See items of concerns.

Industrial User	Sampling	<b>Procedures:</b>

Does the Industrial User Se	If-Monitor?: Yes	Are the	results copied to F	OTW for IU files?	Yes
Is the frequency the	same as specified in Indiv	idual Control Docui	ment?		Yes
How different?					\
Do Self-monitoring re	sults considerably differ f	rom IPP monitoring	results?		No
Do Self-monitoring re	quirements cover all loca	l limits and, if applic	cable, categorical <sub>l</sub>	parameters?	Yes
Does the IU have was would not be covered	testreams that would have by categorical or local lin	e significant impact nits?	on POTW loading	s that	Yes
Explain: PCI	B's				
Are sampling techniq	ues according to 40 CFR I	Part 136 or some ot	her approved meth	ods?	Yes
Are all sample points	and calculations applicab	le for enforcing end	d of process or end	l of pipe limitations?	Yes
Are sample locations	and type of sample the sa	ame as specified in	the ICD?		Yes
Is the Metals sample :	Grab		Is the pH a gra	o sample :	Yes
Where does the IU ha	ve labwork done?	Off site			
Parame	eters done on-site		Parameters don	e off-site	
			Scan 1 Scan 2	DROCARBON	
Name of Off-site lab :	KAR Laboratories, Inco	rporated			
Contact person :	William Bouma, PH.D.		Phone :	(616) 381-9666	
Notes : Orchard Hill Semi-annua Annual: PCE	Landfill self-monitoring I: pH, cyanide, metals (Cd 3's & TCLP	,Cr,Cu,Pb,Ni,Zn,Hg)	, TPH, <b>M</b> DNR Scar	1&2	
Sampling P	oints:				
Are sampling location	ns in an Appropriate place	to get representativ	ve samples of regu	lated streams? Yes	
Can we measure flow	or do we have a verifiable	e estimate of total fl	ow to the sample p	ooint? Yes	
Are sampling points a	accessible to both the Con	trol Authority and t	he facility?	Yes	

Date: 3/12/96 Page: 4

Indid	Samplelocation
OHL	Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.
*	y 1 "
, Ya , "	

Does IPP Sampling card indicate proper sampling location and flow measurement requirements? |Yes |

Notes: The enforcement activities that Orchard Hill Landfill is under at the present time is the restriction to discharge old cell wastewater to the wastewater treatment plant.

Other Items:		
Has the Industrial User submitted a Base	eline Monitoring Report (BMR)?	N/A
Does the BMR include all the information	required in 40 CFR 403.12(B)?	N/A
Is the IU presently under any Enforcemen	nt action by the Control Authority?	Yes
Describe the physical characteristics of t the Industrial User:	the watestream in the sanitary sewer which	is emanating from
Brown colored leachate		
Does the IU's waste minimization effort deterioration as it relates to procedures and		Maintenance
Please elaborate: OHL is under a restri	iction to discharge old cell waste (PCB's fo	und in old cell).
How is the facility generally maintained?	Good	
Is any of the information contained in this	s form confidential information?	No
Attachment 1 : Facility Schematic Attachment 2 : Attachment 3 :		

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Attachment 4 : Attachment 5 :

#### Items of Concern:

Orchard Hill Landfill is separating their leachate according to what cell the leachate comes from. The old cell leachate has traces of PCB's. The leachate from the old cell is being evaporated on-site. The leachate from the new cell is being discharged directly to the Final Effluent Tank from raw waste tanks #1, #3 and #4. The metal treatment system is presently not being used because the concentration levels of the metals are in compliance with our local limits. If the concentration of the metals increases, the system will be brought back on line. The old cell leachate is being discharged into tank #6 (Thickener) with the supernate being discharged to Raw Waste Tank #2. The sludge is re-landfilled. The leachate from the Raw Waste Tank #2 is evaporated.

Late 1995, Orchard Hill Landfill had some zinc violations. These violations were traced back to the new Raw Waste Tank #3 and #4. They have galvinized liners and fittings which leach into the wastewater and caused the violation. The metal treatment system was no operating at that time. Ralph Balkema feels that now the tanks have leach the expendable zinc out, they should not have a problem. Resampling has shown this theory to be correct. Follow up metal samples should taken to monitor the levels of the metals in the leachate.

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EPA Form 8700 22 (Rev 9/88)

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Failure to file is pun shable under section 299 548 MCL or Section 10 of Act 136 PA 1969

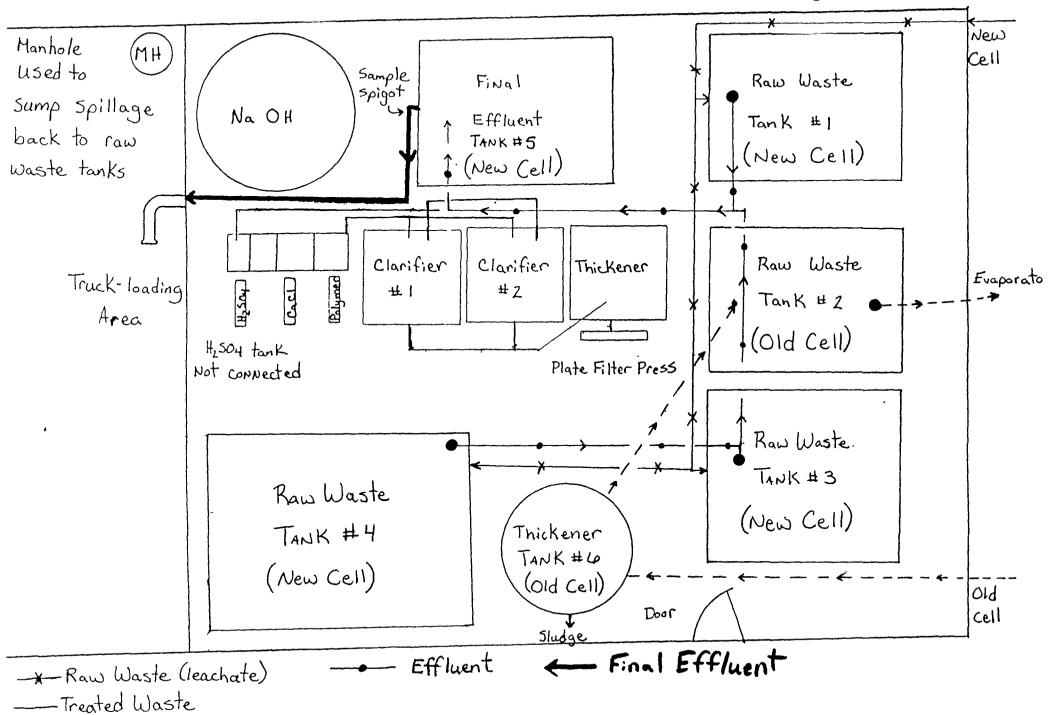
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## Orchard Hill Landfill - Treatment System



## Industrial User Inspection Form

Industry Name Orchard Hill Landfill

Mailing Address 3378 Hennesy Road, Watervliet Michigan 49098

Site Address 3378 Hennesy Road, Watervliet Michigan 49098

Contact Person Mr. Ralph O. Balkema Title Construction Supervisor

Phone (616) - 463 - 5588

## **Inspection Information:**

Inspector's Name Steven M. Rochow Title IPP Inspector

Inspection date(s), time(s) and whether scheduled or unannounced: Scheduled

May 9, 1995 9:00 am - 10:00 am

Reason for Inspection: New Company Spill

Complaint Violation
Routine Sampling X
Non-sampling Annual X

Follow-up Other

Observation: 1) Nature of business: Type II Landfill Leachate

- 2) Orchard Hill Landfill is a hauld waste (leachate). The leachate is delivered by a 8,300 gallon truck tanker and unloaded at the waste hauler station in the municipal pump station at the KWRP.
- 3) In December of 1994, PCBs were detected in Orchard Hill's leachate.

  Orchard Hill cannot deliver any loads until they demostrate that their treated leachate is free of PCBs. See items of concerns.

## General Facility Information:

Description of Process(es) at facility inspected (additional processes; label and attach): Landfill leachate is collected and pumped to Raw Waste Tank #2. Sodium Hydroxide is added to raise the pH, then calcium chloride (presently Alum) is added for flocculation and polymer is added for sedimentation of the heavy metals. The flow enters the clarifiers, the solids settle to the bottom and the liquid then flows to the Final Effluent Tank. From the Final Effluent Tank, the leachate is pumped to the Tanker Truck and discharged at the KWRP municipal pump station. Domestic flow is discharged to a septic tank.

Number of employees: 7

Schedule of Operation:

10 Hours/Day

5.5 Days/Week

01 Shifts/Day 12 Months/Year

Standard Industrial Classification (SIC) Code(s): 4953 Refuse Systems

#### Wastewater Flows:

Process Wastewater Flow Avg. gpd Max. gpd Total Wastewater Flow Avg. gpd Max. gpd

(Flow depend on number of truck loads per day, each truck is 8,300 gallons)

Type of Waste(s) discharged to the system: Flow and Frequency\*

1. Sanitary N/A 2. Process Water N/A 3. Wash Water N/A 4. Rinse Water N/A 5. Cooling Water/NCCW N/A 6. Scrubber Water N/A

7. Truck Waste 8,300 gallons / truck load

8. Deduct Meters N/A

City of Kalamazoo Water/Sewer Accounts: Hand Billed

How are waste flows measured? Each truck load is measured at 8,300 gal.

Water Supply (monthly average): Municipal N/A Well N/A Other N/A

Is this a Categorical Industrial User? *No*Category(s) (if applicable): *N/A*Subcategory (s) (if applicable): *N/A*Is this an existing or new source? *N/A* 

Is this a Significant Industrial User? *Yes*Criteria for this determination (40 CFR 403.3 (t)):

1.) Hauld waste

Is the Industrial User subject to any of the following (Yes,No)? Adequate or representative?

Combined Wastestream Formula	No	N/A
Production-based Categorical Standards	No	N/A
Total Toxic Organic (TTO) Limits	No	N/A
Solvent Management Plans or TOMP	No	N/A

## Wastewater Treatment Facility:

Is there pretreatment at the facility? Yes

What type of pretreatment is used? Continuous

Give a brief description of pretreatment: removal of heavy metals by: pH adjustment with NaOH, flocculation with Calcium Chloride (presently Alum), and sedimentation with polymer, sludge is plate pressed

List wastewaters that are treated in wastewater treatment system: leachate

Are wastewaters that bypass wastewater treatment system adequately protected from spillage of process solutions, storage areas, etc.? Yes

Design flow for treatment system: Maximum flow rate 25 gpm

Is there a full-time operator? Yes

Are all units of the system in service? Yes

Are off-the-shelf stock replacement parts available for critical components: e.g. pumps, probes, meters, etc.? *Yes* 

Is there an O&M Manual? Yes

Is there a potential for bypasses? No

On an attached sheet, provide a brief evaluation of treatment adequacy and efficiency and a diagram of wastewater treatment facility (Diagram should include: Treatment process, direction of flow, sampling points (if any), potential bypass points; discharge point.)

Is there sludge generated due to treatment of wastewater? Yes

Description of Sludge: Gray sludge from plate press

Disposal Method: Re-landfilled on Orchard Hill Landfill

Are there any RCRA hazardous wastes generated? No

Is a Waste Hauler used? Yes

Name of Hauler: Balkema

Identification Number: Not needed because they haul their own waste

Generator Number: N/A

Attach copies of any waste manifests from this facility for the last 12 months. (Since they haul their own waste, no manifest is necessary under RCRA - approved by Mary Douglas of MDNR Plainwell Office)

Waste types: Treated Leachate

Disposal facility used: Kalamazoo Water Reclamation Plant

Identification Number: N/A

## Chemical/Waste Storage Areas:

Is there Chemical/Waste storage on-site? Yes

Type of storage: 2 - 20,000 gallon tanks for raw leachate, 1 - 20,000 gallon tank for treated leachate, 1-4,200 gallon tank for NaOH

Are storage containers clearly labeled? Yes

Provide a list of Bulk Chemicals/Wastes on-site: 4,200 gallons of NaOH, 100 gallons of Calcium Chloride & 100 gallons of polymer

Are incompatibles stored separately? N/A

Are these Chemicals/Wastes stored within a spill contained area of the plant? Yes

Are any of these Chemicals/Wastes on the Critical Material List? No

On an attached sheet, provide a sketch of storage areas. (Sketch should include: locations of Chemicals/Wastes within storage area, floor drains or other outfalls to sanitary sewer system.)

### Spill Prevention and Containment:

Do conditions at this facility require a Spill Prevention Control and Counter Measures Program (SPCC) per 40 CFR 112, a Pollution Incident Prevention Plan (PIPP) per MDNR Rule 5, or a Slug Discharge Prevention Plan concerned with requirements addressing slug discharges in 40 CFR 403.12 (f) and specific prohibition in 40 CFR 403.5 (b)? *No* 

Are emergency spill or discharge procedures posted for immediate employee reference? N/A

Do the emergency spill or discharge procedures include notification policies? N/A

To the Control Authority: *N/A* 

To the Approval Authority: N/A

Is there secondary containment for materials on the Critical Materials List? N/A

Has this facility been responsible for any slug discharges or spills since the last inspection date? No When: N/A

## Industrial User Sampling Procedures:

Does Industrial User Self-monitor? Yes

Are all analytical results copied to POTW for IU file? Yes

Is the frequency the same as specified in the Individual Control Document? Yes How different: N/A

Do self-monitoring results considerably differ from IPP monitoring results? *No* 

Do Self-monitoring requirements cover all local limits and, if applicable, categorical parameters? Yes

Does the IU have wastestreams that have significant impact on POTW loadings that would not be covered by categorical or local limits? *No* Explain: N/A

Are sampling techniques according to 40 CFR Part 136 or some other approved methods? Yes

Are all sample points and calculations applicable for enforcing end of process or end of pipe limitations? *Yes* 

Are sample locations and type of sample the same as specified in the Individual Control Document? Yes

Is metal sample: Hand Grab Explain: Hand grab of unloading truck

Is the pH a grab sample? Yes

Where does Industrial User have laboratory work done: off-site

What parameters are done on-site? None

What parameters are done off-site? OHL - (Semi - Annual) pH, Cyanide, MDNR Scans 1&2, Metals (Cd,Cr,Cu,Pb,Ni,Zn,Hg), Petroleum Hydrocarbon, (Annual) PCBs and TCLP

Name of off-site laboratory: Kar Labs

Contact person and phone: William Bouma (616) 381-9666

Is the IU currently in compliance with local and categorical limits if applicable? *No - See items of concern* 

## Sampling Points:

Are sampling locations in an appropriate place to get representative samples of regulated streams? Yes

Can we measure flow or do we have a vertifiable estimate of total flow to the sample point? Yes

Are sampling locations accessible to both the Control Authority and the facility? Yes

Give brief description of sampling location(s): Septage Hauler Dump Station at the KWRP municipal pump station; also sampling spigot on the Final Effluent Tank

Does IPP Sampling card indicate proper sampling location and flow measurement requirements? Yes

### Other Items:

Has the Industrial User submitted a Baseline Monitoring Report (BMR)? N/A

Does the BMR include all the information required in 40 CFR 403.12(B)? N/A

Is the Industrial User presently under any enforcement action by the Control Authority? Yes - Can't discharge until PCB problem is solved

Describe the physical characteristics of wastestream in the sanitary sewer which is emanating from the Industrial User: *High Ammonia*, *High COD waste with an amber color* 

Does the Industrial User's waste minimization effort show improvement, maintenance, or deterioration as it relates to procedures and monitoring? Please elaborate on an attachment. *Facility is not under a minimization plan*.

How is the facility generally maintained? Good

Is any of the information contained in this form confidential information? No

## Schematic Drawing:

On an attached page provide a schematic drawing of the Industrial Facility. (The schematic drawing should include: locations of sampling points, location of the wastewater treatment system, chemical waste storage areas, spill containment areas, locations of floor drains, direction of wastestream flows, location of outfalls, flow diagram of waste generating processes, etc.)

List and describe all attachments:

Attachment #1: Schematic of Treatment System

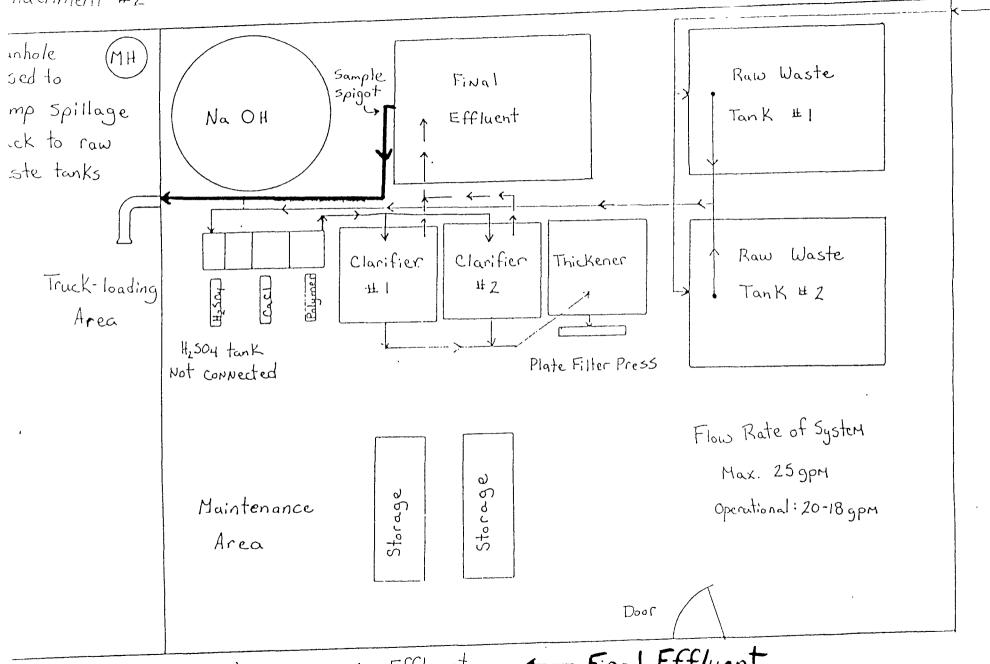
Attachment #2: Schematic of Landfill Site

### Items of Concern:

The Kalamazoo Water Reclamation Plant had some positive hits of PCBs in the Fall of 1994. The investigation indicated that we were receiving PCBs from Orchard Hill Landfill. Tim Meulenberg issued an order stopping Orchard Hill Landfill from discharging their trucked leachate to the KWRP. Orchard Hill discovered that the PCBs are connected to the solids which are discharged. Orchard Hill is trying to use Alum as a settling aid instead of Calcium Chloride because the Alum settles slower catching all the pin floc. The calcium chloride settles to quickly, causing too great of turbence to allow the pin floc to settle. If the Alum does not work, Orchard Hill is exploring the possibility of flitration. Jar testing showed the flitration process to the PCBs levels below the detection limits. Orchard Hill is also exploring the possibility of evaporating all of their leachate. Presently, some of the leachate is being evaporated by using waste methane gas to evaporate the water portion of the leachate and the solids are then re-landfilled. Ralph Balkema is exploring the possibility of expanding the evaporation system. As of May 9, 1995, Orchard Hill Landfill has not discharged to the KWRP since the PCBs investigation.

Hachment #2:

# Orchard Hill Landfill - Treatment System



←Raw Waste (leachate) ←Treated Waste ← ← Effluent

Final Effluent

Kar K . Studye.

Chemical Addition

East bound I-94	No Exit
Incinerator  New Cell  Treatment facility  Public Drag- gar- gar-	Jesy Roo

## INDUSTRIAL USER INSPECTION FORM

Background Informat		
Industry Name	Orchard Hill Lar	df://
Mailing Address	3378 Hennesy	Road
	Water vliet, M.	Road Chijan 49078
Site Address	Same	0
Contact Person	Ralph Balkema	Title Construction Super
Phone	(616) 463-5588	,
Inspection Information		
Inspector's Name	Thren M. Hockow	Title IPP Inspectos
Inspection date(s), time(	s) and whether scheduled or una	nnounced: Sapeduled
	March 10, 1994	9:00-10:15 44
Reason for Inspection:	New Company	Spill
	Complaint Routine	ViolationSampling
	Non-Sampling	Annual
	Follow-up	Other
Observations Nature	of Business. Type-	II Landfell
- Client	hauls landfill Lea	chate in 8,300 Juli
- tank	er truck Balkema	truck to Bo from
Katerr	list to the Kalame	
Plant	/	
	<del>•</del>	
O Jorge	Piller no longer	with Loudlish
Man	aglowent. Rakeh B	Illema new contrai
(3) 1994	Sangling Taken	at KURP
1 - dundantantant	The state of the s	· W · / V/ ·

## General Facility Information:

escription of Process(es) at facility inspected (additional processes; label and attach):	
Pollutants generated from landfill leachate are tructe	ď
with chemical flocculation & sedimentation and air	
stripping. All pretisatment is done on-site before being	<u>y</u> _
hauled to the wastewater treatment plant CKWRF.	
lumber of employees:	
chedule of Operation: 10 Hours/Day 5/2 Days/Week	
Shifts/Day Months/Year	
tandard Industrial Classification (SIC) Code(s): 4953 Refuse System	
Vastewater Flows:	
Process Wastewater Flow Avg. WBoo MA GPD Max. MA GP	D
Total Wastewater Flow Avg. N/A GPD Max. N/A GP  * See Hem of concern for flow information	Έ
vpe of Waste(s) discharged to the system: Flow and Frequency*	
1. Sanitary GF	
2. Process Water \$300 gallons   Truck load G	
3. Wash WaterG	
4. Rinse Water(	
5. Cooling Water/NCCW	
6. Scrubber Water	
7. Other	
8. Deduct Meters	
*Estimate if necessary	

ricant Industrial User Inspect.  $\ \ _{i}$  Form age 3 of 9.

How are waste flows measured? Truck Measurement 18,300 gallows Truck los
Water Supply (monthly average): Municipal Well Other
Is this a Categorical Industrial User?  Yes  No
Category(s) (if applicable):
Subcategory(s) (if applicable):
Is this an existing or new source?
Is this a Significant Industrial User?YesNo
Criteria for this determination (40 CFR 403.3(t)):
Groundwater Remediation Project, Pretreatment
of waste and hould waste
Is the Industrial User subject to any of the following (Yes, No)? Adequate or representative?
Combined Wastestream Formula
Production-based Categorical Standards  Total Taxia Organia (TTO) Limits
Total Toxic Organic (TTO) Limits  Solvent Management Plans or TOMP  **AC
· · · · · · · · · · · · · · · · · · ·
Wastewater Treatment Facility:
Is there pretreatment at the Facility? YesNo
What type of Pretreatment is used? Continuous Batch
Give a brief description of Pretreatment: Flocculation Sedimentation by Chemica
addition of Nalt, Calcium Chloride and polymer; air Stripping
in final effluent tank.
List wastewaters that are treated in wastewater treatment system:
Wo Sanitary waste - Sometary waste is discharged to a
septic tank on-site)
Are wastewaters that bypass wastewater treatment system adequately protected from spillage of process solutions, storage areas, etc.?
YesNo

Had their our praste no marifest necessary RCRA

ificant Industrial User Inspect . Form age 5 of 9.

Chemical/Waste Storage Areas:
Is there Chemical/Waste storage on site? Yes No
Type of storage: Tanks: Two-Zoosogallon tanks for raw leachate
One - 2020 gallow for treated leachate one - 4200 gallow tank  TANK  Are storage containers clearly labeled?  YesNo
Are storage containers clearly labeled? YesNo
Provide a list of Bulk Chemicals/Wastes on site:
4200 gallons of NaCH
1200 gallons of NaCH 100 gallons of Calcium Chloride 100 gallons of Polymer
Sac gallons of Polymer
Are incompatibles stored separately? $\sqrt{A}$ Yes No
Are these Chemicals/Wastes stored within a spill contained area of the plant?
YesNo
Are any of these Chemicals/Wastes on the Critical Materials List?
Yes No
On an attached sheet, provide a sketch of storage areas. (Sketch should include: location of Chemicals/Wastes within storage area, floor drains or other outfalls to sanitary sewersystem.)
Spill Prevention and Containment:
Do conditions at this facility require a Spill Prevention Control and Counter Measures Program (SPCC) per 40 CFR 112, a Pollution Incident Prevention Plan (PIPP) per MDNR Rule 5, or a Slu Discharge Prevention Plan concerned with requirements addressing sludge discharges in 40 CFR 403.12 (f) and specific prohibitions in 40 CFR 403.5 (b)?
No
Are Emergency spill or discharge procedures posted for immediate employee reference?
Yes No

age 6 of 9. Do the Emergency spill or discharge procedures include notification policies? \_\_\_\_\_Yes \_\_\_\_\_\_No Does not discharge directly to Potw) Is there secondary containment for materials on the Critical Materials List? ✓ Yes No Has this facility been responsible for any slug discharges or spills since the last inspection date? \_\_\_\_\_Yes \_\_\_\_\_No When:\_\_\_\_\_ Industrial User Sampling Procedures: Does Industrial User Self-Monitor? Yes \_\_\_\_\_No Are all analytical results copied to POTW for IU file? Is the frequency the same as specified in Individual Control Document? ✓ Yes No How different: Do Self-monitoring results considerably differ from IPP monitoring results? Yes No Do Self-monitoring requirements cover all local limits and, if applicable, categorical parameters? Does the IU have wastestreams that would have significant impact on POTW loadings that would not be covered by catagorical or local limits? Yes No Explain Are sampling techniques according to 40 CFR Part 136 or some other approved methods? Yes
No Are all sample points and calculations applicable for enforcing end of process or end of pipe limitations? Yes \_\_\_\_\_No

ifficant Industrial User Inspec in Form

nificant Industrial User Inspec a Form rage 7 of 9. Are sample locations and type of sample the same as specified in the Individual Control Document? ✓ Yes No Is Metals sample: \_\_\_\_\_ Mechanical \_\_\_\_\_ Hand \_\_\_ Grab 24 Hr. Comp. Explain: Barch Discharge ✓ Yes No. Is the pH a Grab Sample? Where does Industrial User have Laboratory work done: \_\_\_\_On site What parameters are done on site? ph - process control only semi-annucl: Metals (Cd, Cr, Cu, Pb, Ni, Zn, Hg) CN, VOC(Scantez) What parameters are done off site? PHr, pH, Annual-PCB's : TCLP Name of off site Laboratory: William Bounsa 381-9976 9666 Contact Person and phone: Is the IU currently in compliance with local and categorical limits if applicable? Sampling Points: Are sampling locations in an appropriate place to get representative samples of regulated streams? Can we measure flow or do we have a verifiable estimate of total flow to the sample point?

Yes No (8300 galler / Truck or tank)

Are sampling locations accessible to both the Control Authority and the facility?

Give brief description of sampling location(s):

Septage Hauser Dump Station At The KURP or Spigot on final excluent tank at Orchard Hill Land Fill

Does IPP Sampling card indicate proper sampling location and flow measurement requirements?

✓ Yes \_ No

nificant Industrial User Inspec n Form rage 8 of 9.

Attachment #5

Other Items:
Has the Industrial User submitted a Baseline Monitoring Report (BMR)?
YesNo
Does the BMR include all the information required in 40 CFR 403.12(B)?
YesNo
Is the Industrial User presently under any Enforcement action by the Control Authority?
YesNo
Describe the physical characteristics of wastestream in the sanitary sewer which is emanating from the Industrial User:
Guld waste: dark liquid with high BOD
* Recaution- bachate reacts with acid during cample preservation
Does the Industrial User's waste minimization effort show improvement, maintenance, or deterioration as it relates to procedures and monitoring? Please elaborate on an attachment.
How is the facility generally maintained?GoodFairPoor
Is any of the information contained in this form confidential information?
YesNo
Schematic Drawing:
On an attached page provide a schematic drawing of the Industrial Facility. (The schematic drawing should include: locations of process equipment, locations of sampling points, location of the wastewater treatment system, chemical waste storage areas, spill containment areas, locations of floor drains, direction of wastestream flows, location or outfalls, flow diagram of waste generating processes, etc.)
List and describe all attachments:
Attachment #1 / Escription of Treatment Attachment #2 Sellewatic of Treatment System
Attachment #4 Schematic of Landfill

Items of Concern:		
D-Tamblis	1 manag	ement has not open new
cell get		
in 1994	or possif	ble 1995. Started to cap the
old cellous		out to decrease the amount
of Compate		
Ch same and construction .	<del></del>	
Band A	le l	A During Alla Curi
<del>-</del> <del>-</del> <del>-</del>		wax soung see sping
JAN INC	ZOOS &	flows can for
	<i>L</i> / /	
(2) Total amo	Truck Loa	
<u> Vanuary</u>	<u> 24</u>	199, 200
<u>February</u>	19	<u>157, 700</u>
March	30	249,000
- April	16	132,800
May	9	74,700
June	8	66,400
- July	2	16,600
tugust	2	10,680
September	7	58, 100
October	7	58, 100
November	7	58, 100
December	5	41,500
	136	/
- Joras	126	1, 128, 850 gallons for 1995
		735 ///

### $\ensuremath{\mathsf{IND}}_{\geq}\ensuremath{\mathsf{JTRIAL}}$ USER INSPECTION . $\ensuremath{\mathsf{JRM}}$

Background Informat	tion:		CONFIDENTIAL
Industry Name	Orchard 4:11	Landfil	/
Industry Address	3378 Hennes	y Road	
	Wateruliet,		49098
Contact Person	Jerry Miller	Title Qual	ity Control Officier
Phone	(616) 463-5588		
Building or Facility Inspe	cted Type II Landf	ill (OHL) Pre	etreatment System
Date last inspected	March 12, 1992		
Inspection Information	on:		
Inspector's Name	Steven M. Rochou	Title <u>IP/</u>	Inspector
Inspection date(s), time(	s) and whether scheduled or	unannounced _	
	Feb 3, 1993 9:30	An-10:30 AM	
Reason for Inspection:	New Company Complaint Routine/ Non-Sampling Follow-up	Spill	
	d Hill Landfill is		
Manage	ment transports th	e leachate	in a tanker
Truck,	with the capacity of ayoo Water Reclan	8,300 gallo	ns, to the
Kalam	ayoo Water Keclan	nation tha	nt.
	incinerators are		
<u>lmissi</u>	ion equipment is us	ed that re	giures process
water.	v ·		v ·

### General Facility Information:

Description of Process(es) at facility inspected (a	dditional processes; label and attach):
See attachment #1	
New cell should open late 1993. L	eachate from new cell should have
less metals contain in it compai	red to the old leachate. Reason:
more restrictions on incoming ret	use; might not need to treat
the leachate for metals. Flow wi	9
line, but will taper off once o	
treat new leachate until proven ac	, ,
Number of employees: 12	· · · · · · · · · · · · · · · · · · ·
Schedule of Operation: 10 Hours/Day	
/ Shifts/Day	/2Months/Year
Standard Industrial Classification (SIC) Code(s):	4953 Refuse System
Type of Waste(s) discharged to the system:	Flow and Frequency*
1. Sanitary	GPD
2. Process Water	GPD
3. Wash Water	GPD
4. Rinse Water	GPD
5. Cooling Water/NCCW	GPD
6. Scrubber Water	GPD
7. Other Leachate (Hauld)	8,300 gallons / Truck Load GPD
8. Deduct Meters	GPD
*Estimate if necessary Total for ye	ear: 1,867,500 gallons of leachate

Significant Industrial User Ins. Stion Form Page 3 of 8.

How are waste flows measured? Truck Measurement (8,300 gallons / Tanker)
Water Supply (monthly average):MunicipalXWellOther
ls this a Categorical Industrial User? Yes X No
Category(s) (if applicable):
Subcategory(s) (if applicable): N/A
Is this an existing or new source? NA
Is this a Significant Industrial User? X Yes No
Criteria for this determination (40 CFR 403.3(t)):
Groundwater Remediation Project and
Pretreatment of waste
Is the Industrial User subject to any of the following (Yes, No)? Adequate or representative?
Combined Wastestream Formula Production-based Categorical Standards Total Toxic Organic (TTO) Limits Solvent Management Plans or TOMP  No
Wastewater Treatment Facility:
Is there pretreatment at the Facility? X YesNo
What type of Pretreatment is used?ContinuousXBatch
Give a brief description of Pretreatment: Flocculation / Sedimentation by Chemical
addition of NaOH, Calcium chloride and polymer; air stripping in final effluent tank
List wastewaters that are treated in wastewater treatment system: Jeachate
(No sanitary - sanitary waste is discharged to a septic tank on-site)
Are wastewaters that bypass wastewater treatment system adequately protected from spillage of process solutions, storage areas, etc.?

Significant Industrial User Ins. Stion Form Page 4 of 8. Maximum 25gallons/min Design flow for Treatment system: X Yes No Is there a full-time operator? X Yes Are all units of system in service? Are off-the-shelf stock replacement parts available for critical components: e.g. pumps, probes, X Yes No meters, etc.? X Yes No Is there an O & M Manual? X Yes Is there a potential for bypasses? No On an attached sheet, provide a brief evaluation of treatment adequacy and efficiency and a diagram of wastewater treatment facility (Diagram should include: Treatment process, direction of flow, sampling points (if any), potential bypass points, discharge point.) Is there sludge generated due to treatment of wastewater? X Yes \_\_\_\_\_No Hydroxide Sludge Description of Sludge: Re-landfilled at Oichard Hill Landfill Disposal Method: Are there any RCRA hazardous wastes generated? Yes Is a Waste Hauler used? Landfill Management Name of Hauler: (Haul their own waste) NA Identification Number: Generator Number: Attach copies of any waste manifests from this facility for the last 12 months. Treated leachate Waste types: Disposal facility used: Kalamazoo Water Reclamation Plant Identification Number: 1)/4 (Haul their own waste - No manifest necessary (RCRA))

Significant Industrial User Inspection Form Page 5 of 8.

Chemical/Waste Storage Areas:
s there Chemical/Waste storage on site? X YesNo
Type of storage: Tanks: Two - 20,000 gal for naw leachate, one -
20,000gal for treated leachate, one - 4200gal for NaOH
Are storage containers clearly labeled?YesNo
Provide a list of Bulk Chemicals/Wastes on site:
4200 gallons of NaOH
100 gallons of Calcium Chloride
100 gallons of Polymer
Are incompatibles stored separately?YesNo
Are these Chemicals/Wastes stored within a spill contained area of the plant?
Are any of these Chemicals/Wastes on the Critical Materials List?
On an attached sheet, provide a sketch of storage areas. (Sketch should include: locations of Chemicals/Wastes within storage area, floor drains or other outfalls to sanitary sewer system.)
Spill Prevention and Containment:
Do conditions at this facility require a Spill Prevention Control and Counter Measures Program (SPCC) per 40 CFR 112, a Pollution Incident Prevention Plan (PIPP) per MDNR Rule 5, or a Slug Discharge Prevention Plan concerned with requirements addressing sludge discharges in 40 CFR 403.12 (f) and specific prohibitions in 40 CFR 403.5 (b)?
YesNo
Are Emergency spill or discharge procedures posted for immediate employee reference?
XYesNo

Do the Emergency spill or discharge procedures include notification policies? \_\_\_\_\_ Yes \_\_\_ X No Does not discharge directly to POTW To the Control Authority: \_\_\_\_\_\_\_No Is there secondary containment for materials on the Critical Materials List? X Yes No Has this facility been responsible for any slug discharges or spills since the last inspection date? \_\_\_\_\_Yes <u>X</u>\_\_\_No When:\_\_\_\_\_ Industrial User Sampling Procedures: Does Industrial User Self-Monitor?  $\underline{\hspace{1cm}}\underline{\hspace{1cm}}\underline{\hspace{1cm}}$  Yes  $\underline{\hspace{1cm}}$  No Are all analytical results copied to POTW for IU file? X Yes No Is the frequency the same as specified in Individual Control Document? \_\_\_\_X\_\_\_Yes \_\_\_\_\_\_No How different: Do Self-monitoring results considerably differ from IPP monitoring results? Yes X No Do Self-monitoring requirements cover all local limits and, if applicable, categorical parameters? X Yes No Does the IU have wastestreams that would have significant impact on POTW loadings that would not be covered by catagorical or local limits? Yes X No Explain High CBOD Loading Are sampling techniques according to 40 CFR Part 136 or some other approved methods? \_\_\_\_\_X\_\_Yes No Are all sample points and calculations applicable for enforcing end of process or end of pipe \_\_\_\_\_Yes \_\_\_\_\_No limitations?

Significant Industrial User Ins. tion Form

Page 6 of 8.

Significant Industrial User Ins Stion Form Page 7 of 8. Are sample locations and type of sample the same as specified in the Individual Control Document? \_\_\_\_X\_\_\_Yes \_\_\_\_\_No Is Metals sample: \_\_\_\_\_ Mechanical \_\_\_\_\_ Hand \_\_\_\_X \_\_ Grab \_\_\_\_\_24 Hr. Comp. Explain: Batch Discharge Is the pH a Grab Sample? X Yes No Where does Industrial User have Laboratory work done:  $\underline{\hspace{1cm}}$  On site  $\underline{\hspace{1cm}}$  Off site What parameters are done on site? pH, Cyanide Metals (Cd, Cr, Cu, Ni, Pb, Zn, Hg) What parameters are done off site? KAR Laboratories Name of off site Laboratory: Contact Person and phone: William H. Bouma (616) 381-9666 Is the IU currently in compliance with local and categorical limits if applicable? Sampling Points: Are sampling locations in an appropriate place to get representative samples of regulated streams? X Yes No Can we measure flow or do we have a verifiable estimate of total flow to the sample point? \_\_\_\_X\_\_\_Yes \_\_\_\_\_No Are sampling locations accessible to both the Control Authority and the facility? X Yes No Give brief description of sampling location(s): Septage Hauler Dump Station at the KWRP; west of Municipal Pump Station or Spigot on final Effluent tank at Orchard Hill Landfill Does IPP Sampling card indicate proper sampling location and flow measurement requirements?

\_\_\_\_X Yes No

Significant Industrial User In: otion Form Page 8 of 8.
Other Items:
Has the Industrial User submitted a Baseline Monitoring Report (BMR)?
YesXNo
Does the BMR include all the information required in 40 CFR 403.12(B)?
Yes <u>X</u> No
Is the Industrial User presently under any Enforcement action by the Control Authority?
Yes
Describe the physical characteristics of wastestream in the sanitary sewer which is emanating from the Industrial User:
Hauld waste; liquid is dark brown and reacts to the
addition of acids by foaming and a gas is given off.
How is the facility generally maintained? Good Fair Poo
Is any of the information contained in this form confidential information?
XYesNo
Schematic Drawing:
On an attached page provide a schematic drawing of the Industrial Facility. (The schemati drawing should include: locations of process equipment, locations of sampling points, location of the wastewater treatment system, chemical waste storage areas, spill containment areas, location of floor drains, direction of wastestream flows, location or outfalls, flow diagram of waste generating processes, etc.)
List and describe all attachments:
Attachment #1  Attachment #2  Attachment #3  Attachment #4  Attachment #4  Attachment #4  Attachment #5  Attachment #5

\_\_\_Attachment #1: Description of Process \_\_\_\_\_Orchard Hill Landfill uses a Haviland flocculation-sedimentation treatment system to treat their \_\_\_\_\_\_ \_\_\_leachate. Storage Leachate is collected by a drainage system which is sumped to Raw Waste Tank #2 (copacity 20,000 gallons). Raw Waste Tank #/is presently not being used. Treatment: A) Leachate is sumped to a ph adjustment vessel. B.) Chamber number One and Two are used to regulate the pH to 9.0-9.5 by adding Na OH C.) The third chamber Calcium Chloride is added. D.) Polymer is added in the fourth chamber to aid in flocculation Clarification: The treated wastestream is introduced into Clarifiers #1 and #2 A.) Solids Removal. The solids are collected and pumped to the thickener. 1.) Thickener

> a) <u>Sludges</u>: A plate filter press is used to remove solids from the thickener and the sludge cake are landfilled at Orchard Hill Landlill.

- b.) Effluent: The thickeneral fluent is pumped to the head of the treatment system.
- B.) Clarifier's Effluent: Effluent from the clarifiers is discharged to the Final Effluent Tank.

Final Treated Effluent

Effluent from the clarifiers is kept in a

20,000 gallon tank.

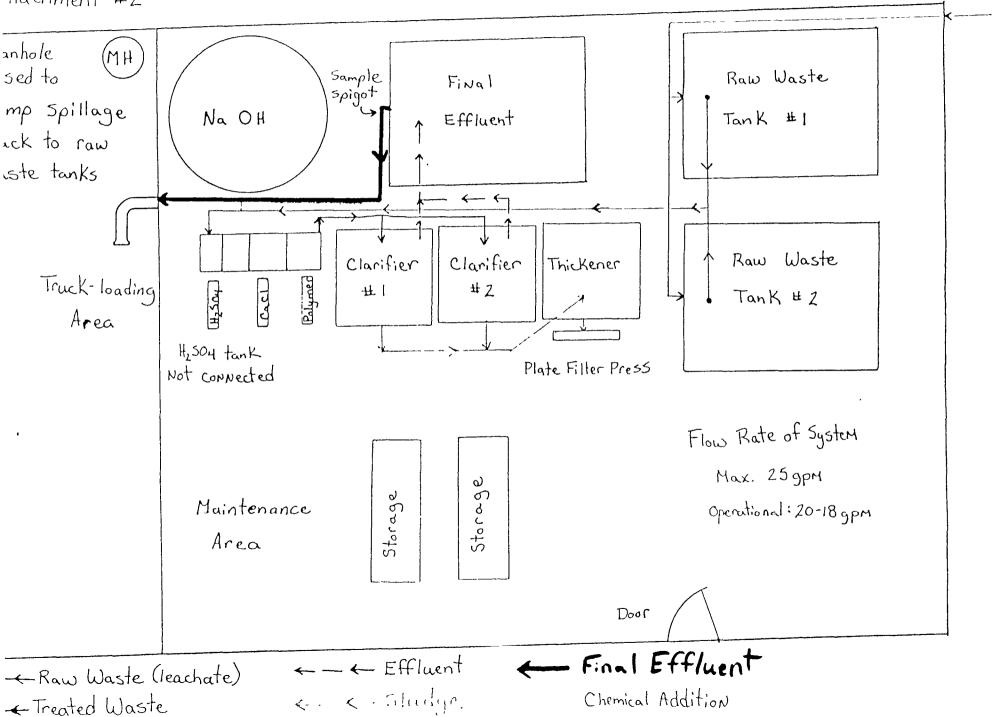
- A) Within the Final Effluent Tank, the leachate is aerated to remove volatiles and to keep the mixture strirred up.
- B.) The final effluent tank has a spigot, where self-monttoring samples are taken.

Transportation: The leachate is loaded into a truck with a capacity of 8,300 gallows. The loading area has secondary containment and a sump to sump spillage to the Raw Waste Tanks.

<u>Disposal</u>: The leachate is unloaded at the Kalamagoo Water Reclamation Plant - Systage hauler discharge station; west of the Municipal Pump Station

Hachment #2:

# Orchard Hill Landfill - Treatment System



parameter	VALUE	_	Units		Sample Type	
AMMONIA-NITROGEN	958.000	_		02/03/93		10:17 AM
Mean	958.000					
parameter	VALUE	_	Units		Sample Type	
ARSENIC	31.300	-		02/03/93		10:17 AM
Mean	31.300					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
CADMIUM	0.400		ug/l	02/03/93	GRAB	10:17 AM
Mean	0.400					
parameter	VALUE	-	Units		Sample Type	Sample Time
CBOD 5-DAY	4830.000	_			GRAB	10:17 AM
Mean	4830.000					
parameter	VALUE	_	Units		Sample Type	
CHROMIUM	58.900	_			GRAB	10:17 AM
Mean	58.900					
parameter	VALUE			Sample Date	Sample Type	
COD					GRAB	
Mean	9160.000					
parameter	VALUE				Sample Type	
COPPER					GRAB	
Mean	204.000					
parameter	VALUE	_	Units		Sample Type	
CYANIDES	160.000				GRAB GRAB	
Mean	150.000					

<sup>·</sup> indicates test results below detection limits

parameter	VALUE		Units	Sample Date		Sample Time
LEAD	13.700	_			GRAB	10:17 AM
Mean	13.700					
parameter	VALUE	_	Units	_	Sample Type	Sample Time
MERCURY	0.000	*			GRAB	10:17 AM
Mean	0.000					
parameter	VALUE	_	Units		Sample Type	
NICKEL	896.000	_		02/03/93	GRAB	10:17 AM
Mean	396.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	136.000	_	mg/l	02/03/93	GRAB	10:17 AM
Mean	136.000					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Tine
SILVER	0.000	*	ug/l	02/03/93	GRAB	10:17 AM
Mean	0.000					
parameter	VALUE				Sample Type	
TOTAL PHOS	1.580				GRAB	
Mean	1.680					
parameter				Date		Time
TOTAL SUS. SOLIDS						
Mean	398.000					
paranitur	VALUE	-	Units	Sample Date		Sample to c
VOLATILE SUS. SOLIDS						10:17 AM
Mean	152.000					

<sup>\*</sup> indicates test results below detection limits

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
ZINC	2242.000	-	ug/l	02/03/93	GRAB	10:17 AM
Mean	2242.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
рН	8.300	-	s.u.	02/03/93	GRAB	10:17 AM
Mean	8.300					

<sup>\*</sup> indicates test results below detection limits



Analytical Laboratory Report City of Kalamazoo FECL #: AA00893 February 17, 1993 Page 2 of 3

FECL #: AA00893

Tag: 1 Orchard Hill

Landfill OHL 03493

#### Purgeable Halocarbons - Method 601

Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane 2-Chloroethylvinyl ether Chloroform Chloromethane Dibromochloromethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethene 1,2-Dichloroethene 1,2-Dichloropropane c-1,3-Dichloropropene t-1,3-Dichloropropene Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene	<pre>&lt;0.001 mg/l &lt;0.001 mg/l</pre>
=	<b>J</b> .



. Analytical Laboratory Report

City of Kalamazoo FECL #: AA00893 February 17, 1993 Page 3 of 3

FECL #: AA00893

Tag: 1 Orchard Hill

Landfill OHL 03493

#### Purgeable Aromatics - Method 602

Benzene	0.041	m~ / 3
Delizelle		٠,
Ethylbenzene	0.052	mg/l
Toluene	0.414	mg/1
p,m-Xylene	0.122	mg/l
o-Xylene	0.059	mg/l

. V. f. Minsha-lipen

Violetta F. Murshak Laboratory Manager

VFM/ajc

### INDUST ... IAL USER INSPECTION FOR ...

Background Informat	<u>ion</u> :	·
Industry Name	Orchard Hill	Landfill
Industry Address	3378 Hennesy	Road
	Watervliet Mi	
Contact Person	Jerry Miller	Title Wastewater Plant Operatory  Quality Control Officier
Phone	(616) 463-5588	- Quality Control Officier
Building or Facility Inspe	cted Type III handf	CII (OHL)
Date last inspected	July 9, 1991	
	-	
Inspection Information	<u>on</u> :	
Inspector's Name	Steven M. Rochou	Title IPP Inspector
Inspection date(s), time(	s) and whether scheduled or t	unannounced March 12, 1992
Reason for Inspection:	New Company	Spill
	Complaint	Violation
	Routine/ Non-Sampling	Sampling / Annual /
	Follow-up	
Observations Oxchare		hauld waste. Balkema,
		rd Hill Landfill transports
_ =		agoo Water Reclamation Plant
Two in	rcinerators are locat	ed on-site. No air emission
	•	equires process water.
0 /		

\*Estimate if necessary

<u> </u>			. •
(innoral	しっついしも	, Intor	mation
General	Tacille	<i>y</i>	<u>mation:</u>
<u> </u>			

1 1 1 1 1		
See attachment #/		<del>- ,</del>
		<del></del>
		<del></del>
		<del></del>
Number of employees:		
Schedule of Operation:/O Hours/Day		
/ Shifts/Day		
Standard Industrial Classification (SIC) Code(s): 495	3 Refuse Sustem	
	J	
Type of Waste(s) discharged to the system:	Flow and Frequency*	
Type of Waste(s) discharged to the system:  1. Sanitary	Flow and Frequency*	GPD
1. Sanitary	Flow and Frequency*	
1. Sanitary	Flow and Frequency*  8,300 gallons/Truck load	
<ul><li>1. Sanitary</li><li>2. Process Water</li></ul>	Flow and Frequency*  8,300 gallons/Truck load	GPD
<ol> <li>Sanitary</li> <li>Process Water</li> <li>Wash Water</li> </ol>	Flow and Frequency*  8,300 gallons/Truck load	GPD GPD
<ol> <li>Sanitary</li> <li>Process Water</li> <li>Wash Water</li> <li>Rinse Water</li> </ol>	Flow and Frequency*  8,300 gallons/Truck load	GPD GPD GPD
<ol> <li>Sanitary</li> <li>Process Water</li> <li>Wash Water</li> <li>Rinse Water</li> <li>Cooling Water/NCCW</li> <li>Scrubber Water</li> </ol>	Flow and Frequency*  8,300 gallons/Truck load	GPD GPD GPD GPD
<ol> <li>Sanitary</li> <li>Process Water</li> <li>Wash Water</li> <li>Rinse Water</li> <li>Cooling Water/NCCW</li> <li>Scrubber Water</li> </ol>	Flow and Frequency*  8,300 gallons/Truck load	GPD GPD GPD GPD

Significant Industrial User Inspect in Form Page 3 of 8.

1. (8- 1/1 1)
How are waste flows measured? Truck measurement (8,300gal/truck)
Water Supply (monthly average):MunicipalX WellOther
Is this a Categorical Industrial User? YesYes
Category(s) (if applicable):
Subcategory(s) (if applicable): N/A
Is this an existing or new source?
Is this a Significant Industrial User? X Yes No
Criteria for this determination (40 CFR 403.3(t)): Groundwater
Remediation Project & Pretreated Waste
Is the Industrial User subject to any of the following (Yes, No)? Adequate or representative?
Combined Wastestream Formula  Production-based Categorical Standards  **No***  **No****  *No***  *
Total Toxic Organic (TTO) Limits Yes Representative
Solvent Management Plans or TOMP No.
Wastewater Treatment Facility:
Is there pretreatment at the Facility? YesNo
What type of Pretreatment is used?ContinuousXBatch
Give a brief description of Pretreatment: Flocculation / Sedimentation by chemical
addition of NaOH, Calcium Chloride and polymer; air stripping
in final effluent tank
List wastewaters that are treated in wastewater treatment system:   leachate
(No Sanitary - Sanitary waste is discharged to a septic tank
on-site)
Are wastewaters that bypass wastewater treatment system adequately protected from spillage of process solutions, storage areas, etc.?

Significant Industrial User Inspec on Form Page 4 of 8. max 25 gallons/min Design flow for Treatment system: X Yes Is there a full-time operator? X No Raw Tank #1 Yes Are all units of system in service? Are off-the-shelf stock replacement parts available for critical components: e.g. pumps, probes, No meters, etc.? X Yes Is there an O & M Manual? Yes X No Is there a potential for bypasses? On an attached sheet, provide a brief evaluation of treatment adequacy and efficiency and a diagram of wastewater treatment facility (Diagram should include: Treatment process, direction of flow, sampling points (if any), potential bypass points, discharge point.) Is there sludge generated due to treatment of wastewater?  $\chi$  Yes \_\_\_\_\_No Hydroxide sludge Description of Sludge: Re-landfill the sludge at Orchard Disposal Method: Hill Landfill Are there any RCRA hazardous wastes generated?

Yes

No X Yes No Is a Waste Hauler used? Orchard Hill Landfill/Balkema (Haul their own waste) Name of Hauler: Identification Number: Generator Number: Attach copies of any waste manifests from this facility for the last 12 months. treated leachate Waste types: Kalamazoo Water Reclamation Plant Disposal facility used:

N/A

Identification Number:

Significant Industrial User Inspectic Form Page 5 of 8.

Chemical/Waste Storage Areas:
Is there Chemical/Waste storage on site?
Type of storage: Tanks: Two-20,000gal for raw leachate, one-
20,000gal for treated leachate, One -4200gal for NaOH
Are storage containers clearly labeled? X YesNo
Provide a list of Bulk Chemicals/Wastes on site:
4200 gallows of NaOH
100 gallows of Calcium Chloride
100 gallows of Polymer
Are incompatibles stored separately?YesXNo
Are these Chemicals/Wastes stored within a spill contained area of the plant?
Are any of these Chemicals/Wastes on the Critical Materials List?
On an attached sheet, provide a sketch of storage areas. (Sketch should include: location of Chemicals/Wastes within storage area, floor drains or other outfalls to sanitary sewe system.)
Spill Prevention and Containment:
Do conditions at this facility require a Spill Prevention Control and Counter Measures Program (SPCC) per 40 CFR 112, a Pollution Incident Prevention Plan (PIPP) per MDNR Rule 5, or a Slu Discharge Prevention Plan concerned with requirements addressing sludge discharges in 40 CF 403.12 (f) and specific prohibitions in 40 CFR 403.5 (b)?
Yes <u>X</u> No
Are Emergency spill or discharge procedures posted for immediate employee reference?
X Yes No

Significant Industrial User Inspect in Form Page 6 of 8. Do the Emergency spill or discharge procedures include notification policies? \_\_\_\_\_Yes \_x No Doesn't discharge to the POTW directly To the Control Authority: Yes No To the Approval Authority: Yes No Is there secondary containment for materials on the Critical Materials List? Has this facility been responsible for any slug discharges or spills since the last inspection date? Yes X No When: Industrial User Sampling Procedures: Does Industrial User Self-Monitor? X Yes No \_\_**\_\_** Yes Are all analytical results copied to POTW for IU file? No Is the frequency the same as specified in Individual Control Document? How different: Do Self-monitoring results considerably differ from IPP monitoring results? Yes X No Do Self-monitoring requirements cover all local limits and, if applicable, categorical parameters? Y Yes No Does the IU have wastestreams that would have significant impact on POTW loadings that would not be covered by catagorical or local limits? Yes X No Explain Are sampling techniques according to 40 CFR Part 136 or some other approved methods? \_\_X Yes No Are all sample points and calculations applicable for enforcing end of process or end of pipe

limitations?

Are sample loca	tions and	type of sample	e the same as specified in the Individual Control Document?
X	_Yes	No	
is Metals sampl	e:	Mechanica	al HandX Grab
		24 Hr. Co	mp. Explain: <u>Batch discharge</u>
Is the pH a Gra			
Where does Ind	ustrial Us	ser have Labor	atory work done: On site Off site
What paramete	rs are do	ne on site?	<u></u> р.Н
What paramete	rs are do	ne off site?	cd, Cr, Cu, Pb, Ni, Zn, Hg, Cyanide, PH
			PCB's
Name of off sit	e Laborat	tory:	KAR haboratories
Contact	Person ar	nd phone:	William H. Bouma (616) 381-9666
Is the IU currer	-	mpliance with	local and categorical limits if applicable?
Sampling Po	ints:		
Are sampling lo	cations ir	n an appropriat	e place to get representative samples of regulated streams?
	<del></del> `	Yes	No
Can we measu	re flow o	r do we have	a verifiable estimate of total flow to the sample point?
	X	Yes	No
Are sampling lo	ocations a	accessible to b	ooth the Control Authority and the facility?
	<u> </u>	Yes	No
Give brief desc	ription of	f sampling loca	etion(s):
Septage	Hauler I	Jump Station	at the KWRP west of the Raw Municipal Pump Station
_		-	tank at Orchard Hill Landfill
J			er sampling location and flow measurement requirements?

\_\_\_\_\_Yes \_\_\_\_\_No

Significant Industrial User Insp Page 8 of 8.	pection Form
Other Items:	
Has the Industrial User submit	tted a Baseline Monitoring Report (BMR)?
Yes	<u>⊁</u> No
	information required in 40 CFR 403.12(B)?
Yes	<u> No</u>
	y under any Enforcement action by the Control Authority?  Mercury Minimization Plan  No
Describe the physical characte the Industrial User:	ristics of wastestream in the sanitary sewer which is emanating from
Hauled waste; liqui	d is dark brown and reacts to the
addition of H250	Dy by foaming * gas is given off.
How is the facility generally r	maintained? X Good Fair Poor
Is any of the information con-	tained in this form confidential information?
Yes	<u>XNo</u>
Schematic Drawing:	
drawing should include: locathe wastewater treatment sys	e a schematic drawing of the Industrial Facility. (The schematic tions of process equipment, locations of sampling points, location of stem, chemical waste storage areas, spill containment areas, locations wastestream flows, location or outfalls, flow diagram of waste
List and describe all attachme	ents:
Attachment #2 <u>Sc</u>	escription of Process hematic of Treatment Process chematic of Landfill

Attachment #5

Attachment #1: Description of Process

Orchard Hill Landfill uses a Haviland flocculationsedimentation treatment system to treat their leachate.

Storage: Leachate is collected by a drainage system which is sumped to Raw Waste Tank #2 (copacity 20,000 gallons). Raw Waste Tank #/is presently not being used.

## Treatment:

- A.) Leachate is sumped to a pH adjustment vessel.
- B) Chamber number One and Two are used to regulate the pH to 9.0-9.5 by adding Na OH
- (.) The third chamber Calcium Chloride is added.
- D.) Polymer is added in the fourth chamber to aid in flocculation

Clarification: The treated wastestream is introduced into Clarifiers #1 and #2

A) Solids Removal: The solids are collected and pumped to the thickener.

1.) Thickener

a) Sludges: A plate filter press is used to remove solids from the thickener and the sludge cake are landfilled at Orchard Hill Landfill.

- b.) Effluent: The thickener's effluent is pumped to the head of the treatment system
- B.) Clarifier's Effluent Effluent from the clarifiers is discharged to the Final Effluent Tank

Final Treated Effluent

Effluent from the clarifiers is kept in a 20,000 gallon tank.

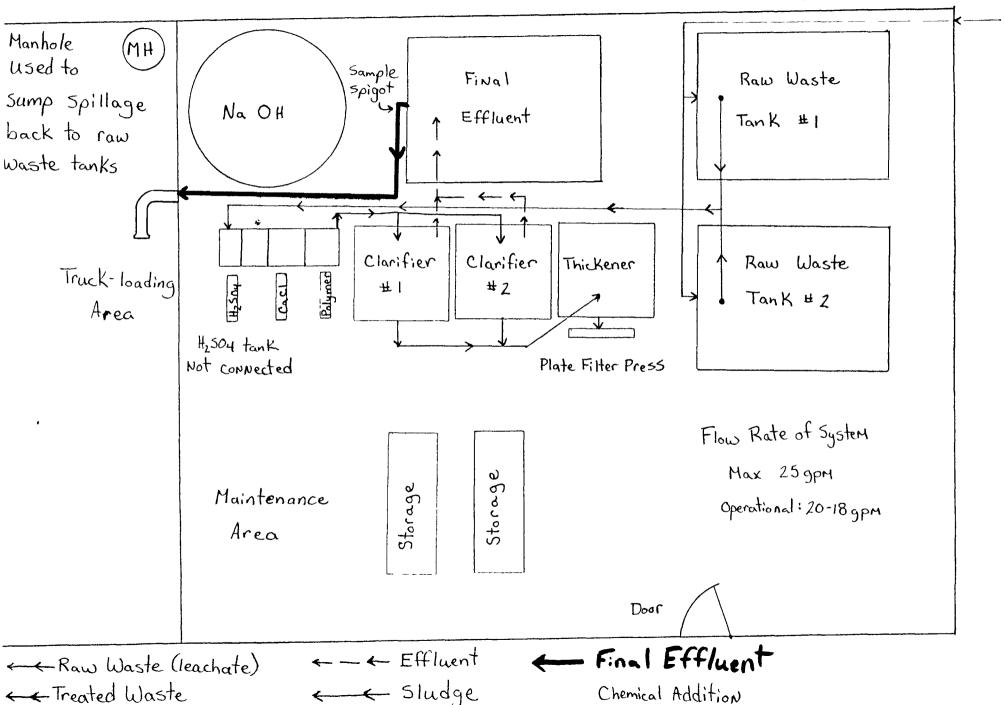
- 4) Within the Final Effluent Tank, the leachate is aerated to remove volatiles and to keep the mixture strived up.
- B) The final effluent tank has a spigot, where self-monttoring samples are taken.

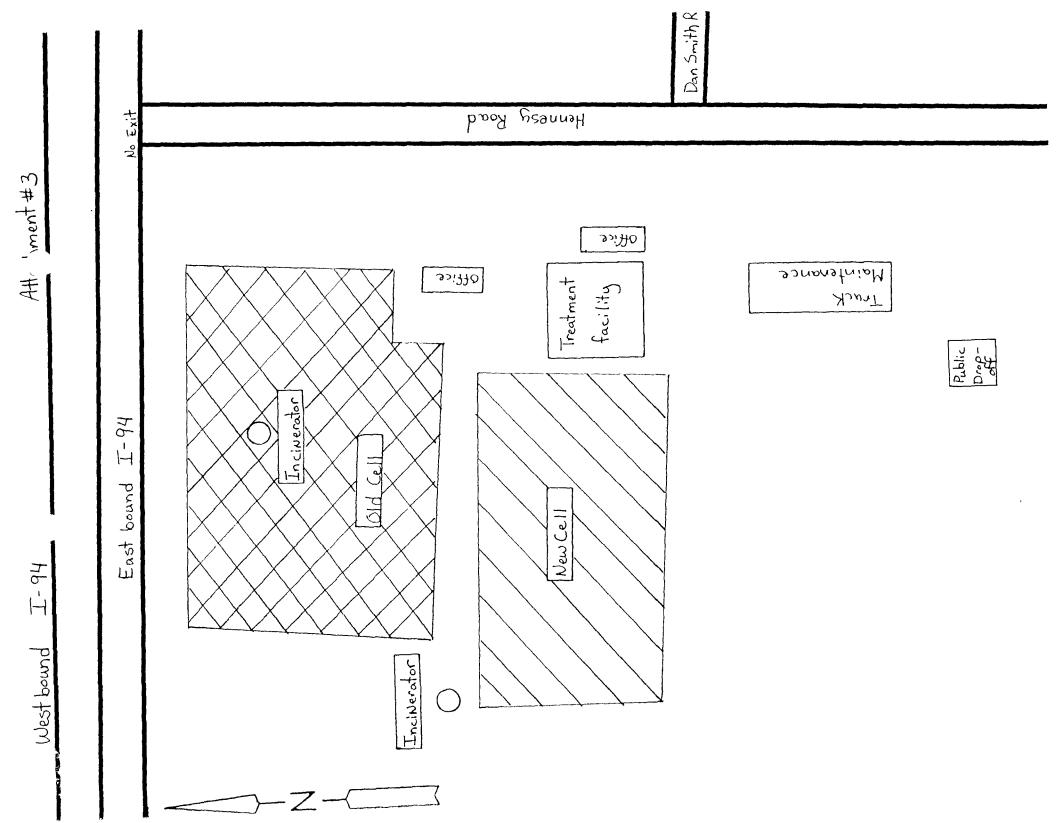
Transportation. The leachate is loaded into a truck with a capacity of 8,300 gallons. The loading area has secondary containment and a sump to sump spillage to the Raw Waste Tanks.

<u>Disposal</u> The leachate is unloaded at the Kalamanoo Water Reclamation Plant - Septage hauler discharge station, west of the Municipal Pump Station

Attachment #2:

## Orchard Hill Landfill - Treatment System





Name of Facility Orchard Hills Landfill  Address  Contact Joing Miller  Date Huly 9, 1991  Time 10.32-11:30 am
Contact your must
Purpose: Inspection of Pretreatment System
A+1+1
Items Discussed: Patheatment System has been moved to
a new location. During shutdown the MONR gave
them permission to apply leachate back on to the landfill.
The System consists of flocardation & sedimentation
via pH adjustment & chemical en hancement through to
addition of a polymer. Variance in the strength of
leachate is handled by monitoring pH and
maintaining 9.0 - 9.5 s.u. within the first two
Observations: tanks and The third tank is where polymen
is added. The flow then proceeds to a clarifier + thickener
where sludge is removed and transfered to a killer press
and effluent is transported to the KWRP additional clarifies and
after a year of monitoring they are now
required to sample only (2) times per year per A.O.
required to sample only (2) times per year per A.O. Further Action Required: heachate origionales from old cells
which programs of the state of well as a small of the form
which received eight waske as well as new colls that
fall under more stringent land fell restrictions
which received liquid waste as well as new cells that fall under more stringent landfill restrictions  Lab data shows continued compliance
Tracking Book: (please circle)
Inspection Meeting Compliance Schedule Violation Sum None
Signature Timothy Meulen berg
Signature / vmoung/thurnvry
<b>u</b>

## KALAMAZOO WATER RECLAMATION PLANT INDUSTRIAL WASTE INSPECTION

Company: Orchard Hills handfill Date: March 5, 1990  Address: 3378 Hennesy Rd Inspector(s) Meulen ferg
Address: 3378 Hennesy Rd Inspector(s) Meulen berg
Address: 3378 Hennesy Rd Inspector(s) Meulen ferg City/Zip: Waterwhiet Merchant
Phone: 463-5588
Representative/Title: Jerry Miller / Ralph Balkema
,
Original Non-Domestic User Survey (NDUS) date: updated:
Previous Inspection date:
Codes designating source of information: NDUS = Non-Domestic User Survey, Rep = Company Representative, IO = Inspector Observation
I. GENERAL INFORMATION
1. Nature of business: Santary Fandfill
2. SIC Code: Sanitary service 4953 Réfuse Systems
3. Industrial Pretreatment Category:
4. Schedule of Operation:number of employees,hours/day,
5 days/week, / shifts/day, / months/year

1.	Items on Critical Materials List or Priority Pollutants List from NDUS:
<del>-,</del>	•
Add	ditional from I.O:
2.	Description of processes: Sanitary Landfill
3.	Information considered confidential:
	1
4.	Water supply and consumption:
	_

II. PROCESS AND PRODUCTS

# III. PROCESS WASTEWATER

Des	cription and drawings of process flow and	floor drains to each outfall.
Sill State 2.	Holding Tank pool of the Clarify Pretreatment Burylaining  Holding Tank pool of the Clarify Tank  Volumes drof of School of Calque Chloride  Volumes drof of School of Charles Daily, Maximum	Jandful perimeter is surrounded with leachate wells with a combined flow of 5-8 gallons per minute in a holding tank. The treatment system operates on a flow of 18 to 20 gpm on an 8 hr. day and trucked to KWRP  - effluent leachate from thickness + filter press - sludge - leachate from landfill cimum Daily, Method of Measurment).
3.	Type of wastewater:	
	A. % Process 18-20 gam	B. % Cooling
	C. % Sanitary —	D. % Other
	I.O	
4.	: Drains (roof, parking lot, etc.) disestimated area drained:	scharging to sanitary sewer and

IV.	DISPOSAL PRACTICES
1.	Disposal of spent chemicals and volumes: NA
2.	Disposal of spoilage and volume:
3.	Disposal of precipitates and sludges: Analysis has to be done:
4.	Name and license number of waste hauler:
5.	Pretreatment Techniques: Flocculation sedimentation by chemical addition of NaOH, Calcium Chloride + polymer.
٠	
6.	Air emission control equipment with a wastewater discharge:  torch to burn off methanc gasses
7.	Materials listed in Tables I that are discharged(Item II.1):

1. Bulk material stored on site (include volumes): NaOH, Calcina
Chloride, polymer
2. Is there any secondary containment for bulk materials?
3. Is there secondary containment for processes which contain materials from Table I?
NO Floor draws to KWPP System
4. Separate storage for chemicals which cause hazardous reactions?
5. Does facility have a Spill Prevention Control and Counter Measures Progra (SPOC) CFR 112 or a Pollution Incident Prevention Plan (PIPP) MDNR Rule 5?
VI. SAMPLING AND ANALYSIS
1. Description of sampling points for each process and/or process outfall: (describe source and volume of any non-process flow through sample point).

V. SPILL PREVENTION:

2.	Processes and/or outfalls which do not have a suitable sampling point:
3.	Company's Sampling program: Orchard Hills is planning on GC + ICP units for groundwater monitoring in the near future
4.	Laboratory analyses available on site: 560 N

# VII. MISCELLANEOUS

1. Safety precautions:

\$75.00n c

Date: 2/15/90 Number: 0052-90

Number: 0052-90

Sample from: ORCHARD HILL LANDFILL

to: HAVILAND ENGINEERING

attn: GEORGE BABB

Sample of: POST START-UP EFFLUENT ANALYSIS

Zn $N \imath$ FeCuPbCdCrpHmg 1 ng l mg/1mg Ing J mg 1mg ] units 0.63 0.90 WASTEWATER 2/13/90 38.4 0.06 <0.08 <0.01 0.088.4 4:30PM

I certify that the above report is correct and true to the best of my knowledge.

Notary Public -Commission Expires

SIGNED

JAMES VANDER WERP

Group Industry
No No
493

COMBINATION ELECTRIC AND GAS, AND OTHER UTILITY SERVICES-Con.

#### 4931 Electric and Other Services Combined

Establishments primarily engaged in providing electric services in combination with other services, with electric services as the major part though less than 95 percent of the total.

Electric and other services combined (electric less than 95 percent of total)

#### 4932 Gas and Other Services Combined

Establishments primarily engaged in providing gas services in combination with other services, with gas services as the major part though less than 95 percent of the total.

Gas and other services combined (gas less than 95 percent of total)

#### 4939 Combination Utilities, Not Elsewhere Classified

494 WATER SUPPLY

#### 4941 Water Supply

Establishments primarily engaged in distributing water for sale for domestic, commercial, and industrial use. Systems distributing water primarily for irrigation service are classified in Industry 4971.

Water supply systems, except irrigation

#### 495 SANITARY SERVICES

#### 4952 Sewerage Systems

Establishments primarily engaged in the collection and disposal of wastes conducted through a sewer system, including such treatment processes as may be provided.

Sewerage systems

#### 4953 Refuse Systems

Establishments primarily engaged in the collection and disposal of refuse by processing or destruction Establishments primarily engaged in collecting and transporting refuse without disposal are classified in Industry 4212.

Acid waste, collection and disposal Ashes, collection and disposal of Dead animal disposal Dumps, operation of Garbage collecting, destroying, and processing Incherator operation Radioactive waste materials disposal Refuse systems Rubbish collection and disposal Street refuse systems Waste materials, disposal at sea

#### 4959 Sanitary Services, Not Elsewhere Classified

Establishments primarily engaged in furnishing sanitary services, not elsewhere classified

Malaria control Mosquito eradication Snowplowing Sweeping service road airport park ing lot, etc Vacuuming of airport runways

#### 496 STEAM SUPPLY

#### 4961 Steam Supply

Establishments engaged in the production and/or distribution of steam and heated or cooled air for sale.

Cooled air suppliers Distribution of cooled air Steam heating systems (suppliers of heat) Steam supply systems, including geo thermal

Group Industry
No No.
IRRIG

497

4971 Irrigat

Esta of irri

(WATERWA 5 chays/wh & & his/chay 2-20,000 Gr. TANK ORCHARD HIL LANDFIEL 45c 2/2/2 LEACHFTE TO AT OF THE CONTRACT OF THE C 20,000 PETTER PHOMPE REATHERNT 北部 Swoce CLAMIFIER PORT OF THE PROPERTY OF THE PR 1-thetwood Smooth C. E. E. S. M. Lowmod JALLONS/ Run (8.20 GFM S growing water 130/m 3-5-19 Torse GFPLARENT GF Spareté Port 7147 20,000 \$ 160,000 P CHIM PUTTE Commission of the many of the Jes , 2/2) 10 Truck



3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

# ORCHARD HILL SANITARY LANDFILL SEMI ANNUAL FLOW REPORT JULY 1, 1998 - DECEMBER 31, 1998

TOTAL	15 LOADS	124,500 GALLONS
DECEMBER 1998	3 LOADS	24,900 GALLONS
NOVEMBER 1998	9 LOADS	74,700 GALLONS
OCTOBER 1998	3 LOADS	24,900 GALLONS
SEPTEMBER 1998	0 LOADS	0 GALLONS
AUGUST 1998	0 LOADS	0 GALLONS
JULY 1998	0 LOADS	0 GALLONS

6 MONTH AVERAGE FLOW

184 DAYS AVERAGE FLOW

20,750 GALLONS PER MONTH

676.63 GALLONS PER DAY

Repld Blum Construction Supe 1-7-99

> 1/13/99 SK



3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

# ORCHARD HILL SANITARY LANDFILL SEMI ANNUAL FLOW REPORT FOR JANUARY 1, 1998 - JUNE 30, 1998

JANUARY 1998	52 LOADS	431,600
FEBRUARY 1998	45 LOADS	373,500
MARCH 1998	47 LOADS	390,100
APRIL 1998	41 LOADS	340,300
MAY 1998	23 LOADS	190,900
JUNE 1998	10 LOADS	83,000
TOTAL	218 LOADS @8300 GAL	1,809,400 GALLONS

6 MONTH AVERAGE FLOW

301,567 GALLONS PER MONTH AVERAGE

Construction Supv.

181 DAILY AVERAGE FLOW

9997 GALLONS PER DAY





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# ORCHARD HILL SANITARY LANDFILL SEMI-ANNUAL FLOW REPORT FOR JULY 1, 1997 - DECEMBER 31. 1997

## 47 LOADS AT 8300 GALLONS EACH = 390,100 GALLONS

JULY	1 LOAD	8,300 GALLONS
AUGUST	0	0
SEPTEMBER	0	0
OCTOBER	3 LOADS	<b>24,900 GALLONS</b>
NOVEMBER	6 LOADS	49,800 GALLONS
DECEMBER	37 LOADS	<b>307,100 GALLONS</b>
TOTAL	47 LOADS	390.100 GALLONS



6 MONTH AVERAGE FLOW 65,017 GALLONS PER MONTH

183 DAILY AVERAGE FLOW 2,132 GALLONS PER DAY

Afloplan



3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

ORCHARD HILL SANITARY LANDFILL SEMI ANNUAL FLOW REPORT FOR JANUARY 1, 1997 - JUNE 30, 1997



## 55 LOADS AT 8300 GALLONS EACH = 456,500 GALLONS

6 MONTH AVERAGE FLOW		76,083 GALLONS PER MONTH
TOTAL	55 LOADS	456,500 GALLONS
JUNE 1997	0 LOADS	0 GALLONS
MAY 1997	16 LOADS	132,800 GALLONS
APRIL 1997	1 LOAD	8,300 GALLONS
MARCH 1997	10 LOADS	83,000 GALLONS
FEBRUARY 1997	24 LOADS	199,200 GALLONS
JANUARY 1997	4 LOADS	33,300 GALLONS

181 DAILY AVERAGE FLOW

2,522 GALLONS PER DAY

Gell Blim



# KALAMAZOO WATER RECLAMATION PLANT

#### INDUSTRIAL USER SELF-MONITORING REPORT

Facility: Orchard Hill Landfill

3378 Hennesy Road Watervliet MI 49098 **Due:** January 10, 1997

Reporting Period: July 1, 1996 - December 31, 1996

Sample Code: OHL

Location: Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.

**Monitoring Requirements:** 

		Monthly Avg.		<b>.</b>	
<u>Pollutants</u>	Daily Max.	<u>Max.</u>	<u>Unit</u>	Results	Sample Type
BETX	15		mg/l	• 1998	GRAB
CADMIUM	40		ug/l	<u> </u>	GRAB
COPPER	2230		ug/l	<u> </u>	GRAB
CYANIDE	250		ug/l	<u> </u>	GRAB
LEAD	110		ug/l	<u> </u>	GRAB
MDNR SCAN 1				Attach Data 🗸	GRAB
MERCURY	0		ug/l	_ < /	GRAB
NICKEL	1590		ug/l	<u>43</u>	GRAB
PCBs	0		ug/l	N/R	GRAB
PCBs (Annually)				Attached	GRAB
TCLP (Annually)				Attached	GRAB
TOTAL CHROMIUM	4670		ug/l		GRAB
TOTAL PETROLEUM HYDROCARBON	100		mg/i	<1	GRAB
ZINC	5300		ug/l	201	GRAB
рН	6.2 - 9.8		S.U.		GRAB

N/R indicates Not Required

PLEASE ATTACH COPIES OF LABORATORY RESULTS

Flow Information: 5000 go/ Average Daily (	GPD) /5000 Maximum Daily (GPD)
Date and Time of Sampling: 10-23-96  Grab: Incoming Holding Tank	Composite:
Grab: Incoming Holding Tank	Grab:
Grab:	Grab:

Note: If more than one batch is discharged on the day of sampling, please sample each batch and composite the samples prior to analysis.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

TCLP and PCB analysis must be conducted on an annual basis.

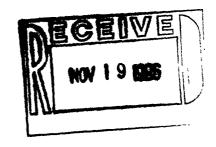
Contact:

Raigh O. Baikema

11- 7-96 Date

Title:

**Construction Supervisor** 



# KARLaboratories, Inc.

Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098 KAR Project No. : 962900

Date Reported : 11/06/96

Date Activated : 10/23/96

4425 Manchester Road

Date Activated : 10/23/96
Date Due : 11/06/96
Date Validated : 11/06/96

Kalamazoo MI 49001

Attn: Mr. Ralph Balkema

Phone 616 381 9666

**Project** 

Fax 616 381 9698

Description: Analysis of one new leachate tank sample for IPP

Monitoring.

Dear Client,

Your laboratory data is presented to you in this report. Unless otherwise stated under the "Comments" heading, all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and the result represents the sample as it was received.

If you wish to contact us about this work please mention KAR Project No 962900. To arrange additional sampling or testing please contact our Client Services Department. If you have a question regarding quality assurance please contact William Rauch

Thank you for the opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

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KAR Project No.: 962900

Date Reported: 11/06/96

Project Description: Analysis of one new leachate tank sample for IPP Monitoring.

Sample ID: "New Leachate Tank"

Client: Orchard Hills Landfill

Sampled By: Client Date Received: 10/23/96 Sample Date: 10/23/96 Sample Type: aqueous Sample Time: 1:15p KAR Sample No.: 962900-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep. Hq	Completed		EPA 245 2	11/1/96	МТМ	
Prep, metals	Completed		EPA 30xx, 200 x	10/28/96	DBL	
Cadmium, total	<10	ug/L	EPA 200 7	10/29/96	DBL	Elevated detection limit due to sample matrix interference
Chromium, total	14	ug/L	EPA 200 7	10/29/96	DBL	
Copper, total	38	ug/L	EPA 200 7	10/29/96	DBL	
Lead, total, by ICP	<50	ug/L	EPA 200 7	10/29/96	DBL	
Mercury, total	<1	ug/L	EPA 245 2	11/2/96	MTM	Elevated detection limit due to sample matrix interference
Nickel, total	43	ug/L	EPA 200 7	10/29/96	DBL	
Zinc, total	201	ug/L	EPA 200 7	10/29/96	DBL	
TCLP extraction	Completed		EPA 1311	10/29/96	PML	
ZHE extraction	Completed		EPA 1311	10/29/96	PML	
Cyanide, total	<5	ug/L	EPA 335 2	11/4/96	PML	
PH	71	SU	EPA 150 1	10/24/96	KAC	
TPH (Infrared Method)	<1	mg/L	EPA 418 1	10/29/96	KAC	
MDNR Scan 1 & 2	See below	1-2	EPA 8260	10/29/96	JAR	
Prep VOA	Completed		EPA 5030	10/29/96	JAR	
1,1,1-Tnchloroethane	<1	ug/L	EPA 8260	10/29/96	JAR	
1.1.2.2-Tetrachloroethane	<1	ug/L	EPA 8260	10/29/96	JAR	
1,1,2-Trichloroethane	<1	ug/L	EPA 8260	10/29/96	JAR	
1.1-Dichloroethane	48	ua/L	EPA 8260	10/29/96	JAR	
1,1-Dichloroethene	<1	ug/L	EPA 8260	10/29/96	JAR	
1,2-Dichloroethane	<1	ug/L	EPA 8260	10/29/96	JAR	
1,2-Dichloropropane	<1	ug/L	EPA 8260	10/29/96	JAR	
Benzene	7.8	ug/L	EPA 8260	10/29/96	JAR	
Bromodichloromethane	<1	ug/L	EPA 8260	10/29/96	JAR	
Bromoform	<1	ug/L	EPA 8260	10/29/96	JAR	
Bromomethane	<1	ug/L	EPA 8260	10/29/96	JAR	
Carbon tetrachloride	<1	ug/L	EPA 8260	10/29/96	JAR	
Chiorobenzene	<1	ug/L	EPA 8260	10/29/96	JAR	
Chloroethane	<1	ug/L	EPA 8250	10/29/96	JAR	
Chloroform	<1	ug/L	EPA 8260	10/29/96	JAR	
Chloromethane	<1	ug/L	EPA 8260	10/29/96	JAR	
Cis-1,2-Dichloroethene	3 5	ug/L	EPA 8260	10/29/96	JAR	
Cis-1,3-Dichloropropene	<1	ug/L	EPA 8260	10/29/96	JAR	
Dibromochloromethane	<1	ug/L	EPA 8260	10/29/96	JAR	
Ethylbenzene	18	ug/L	EPA 8260	10/29/96	JAR	
M-and/or p-xylene	47	ug/L	EPA 8260	10/29/96	JAR	
Methylene chlonde	26	ug/L	EPA 8260	10/29/96	JAR	
O-Xylene	17	ug/L	EPA 8260	10/29/96	JAR	

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KAR Project No.: 962900

Date Reported: 11/06/96

Project Description: Analysis of one new leachate tank sample for IPP Monitoring.

Sample ID: "New Leachate Tank"

Client: Orchard Hills Landfill

Sampled By: Client Date Received: 10/23/96 Sample Date: 10/23/96 Sample Type: aqueous Sample Time: 1:15p KAR Sample No.: 962900-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Tetrachloroethene	<1	ug/L	EPA 8260	10/29/96	JAR	
Toluene	110	ug/L	EPA 8260	10/29/96	JAR	
Trans-1,2-Dichloroethene	<1	ug/L	EPA 8260	10/29/96	JAR	
Trans-1,3-Dichloropropene	<1	ug/L	EPA 8260	10/29/96	JAR	
Tnchloroethene	<1	ug/L	EPA 8260	10/29/96	JAR	
Tnchlorofluoromethane	<1	ug/L	EPA 8260	10/29/96	JAR	
Vinyl chloride	4 4	ug/L	EPA 8260	10/29/96	JAR	
Prep, ECD	Completed		EPA 3510	10/30/96	SAS	
PCB Aroclor 1016	<0.1	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclor 1221	<01	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8081	11/1/96	MSZ	
PCB Aroclors, total	NA		EPA 8081	11/1/96	MSZ	

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KARLaboratories, Inc.







KAR Project No.: 962900

Date Reported: 11/06/96

Project Description: Analysis of one new leachate tank sample for IPP Monitoring.

Sample ID: TCLP Leachate of New Leachate Tank

Client: Orchard Hills Landfill

Sampled By: Client

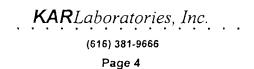
Sample Date:

Sample Type: TCLP

KAR Sample No.: 962900-01T

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
TC Metals	See below			11/1/96	MTM	
Prep Hg	Completed		EPA 245 2	11/1/96	MTM	
Prep, metals	Completed		EPA 30xx,200 x	10/30/96	DBL	
Arsenic, total, by ICP	<02	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 5.0 mg/L
Banum total	0 95	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 100 mg/L
Cadmium, total	<0.01	mg/L	EPA 6010A	11/1/96	_MTM	TC regulatory limit is 1 0 mg/L
Chromium, total	<0.02	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 5.0 mg/L
Copper, total	<01	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 100 mg/L.
Lead, total, by ICP	<01	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 5 0 mg/L
Mercury total	<0 0005	mg/L	EPA 7471A	11/2/96	MTM	TC regulatory limit is 0.2 mg/L
Selenium, total, by ICP	<02	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 1 0 mg/L
Silver, total	<0.01	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 5 0 mg/L
Zinc total	0 06	mg/L	EPA 6010A	11/1/96	MTM	TC regulatory limit is 500 mg/L
TC Semi-Volatiles	See below		EPA 8270	11/4/96	KTL	
Prep, SV Acid/BN	Completed		EPA 3510	11/1/96	SAS	
2,4,5-Trichlorophenol	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 400 mg/L
2,4,6-Trichlorophenol	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 2.0 mg/L
2,4-Dinitrotoluene	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0.13 mg/L.
Cresols	0 29	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 200 mg/L
Hexachlorobenzene	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0.13 mg/L
Hexachlorobutadiene	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0.5 mg/L
Hexachloroethane	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 3.0 mg/L
Nitrobenzene	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 2.0 mg/L
Pentachlorophenol	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 100 mg/L
Pyndine	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 5.0 mg/L
Chlordane	<0.03	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0 03 mg/L
Endrin	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0 02 mg/L
Heptachlor	<0.008	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0 008 mg/L
Heptachlor epoxide	<0 008	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0 008 mg/L
Lindane	<0.01	mg/L	EPA 8270	11/4/95	KTL	TC regulatory limit is 0.4 mg/L
Methoxychlor	<0.01	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 10 0 mg/L
Toxaphene	<0.5	mg/L	EPA 8270	11/4/96	KTL	TC regulatory limit is 0.5 mg/L

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KAR Project No.: 962900

Date Reported: 11/06/96

Project Description: Analysis of one new leachate tank sample for IPP Monitoring.

Sample ID: ZHE Leachate of New Leachate Tank

Client: Orchard Hills Landfill

Sampled By: Client Date Received: 10/23/96
Sample Date: Sample Type: ZHE

Sample Time: KAR Sample No.: 962900-01Z

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
TC Volatiles	See below		EPA 8260	10/31/96	JAR	
Prep, VOA	Completed		EPA 5030	10/31/96	JAR	
1,1-Dichloroethene	<0.001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.7 mg/L
1,2-Dichloroethane	<0.001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.5 mg/L
1,4-Dichlorobenzene	0 002	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 7.5 mg/L
Benzene	0 007	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.5 mg/L
Carbon tetrachlonde	<0.001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.5 mg/L
Chlorobenzene	<0 001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 100 mg/L
Chloroform	<0 001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 6.0 mg/L
Methyl ethyl ketone	27	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 200 mg/L
Tetrachloroethene	<0.001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.7 mg/L
Tnchloroethene	<0 001	mg/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.5 mg/L
Vinyl chlonde	<0.001	ma/L	EPA 8260	10/31/96	JAR	TC regulatory limit is 0.2 mg/L

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Client:			P.O. #				Reques	ted Ana	alyses						KAR use only
OHL  Attn: Rulph Kalker.  Phone: Fax:	no.		# Of Samples  Sampled By:	/	INT.		abed								Proj#: 962900  Date: 10.23.96  Logla: Source:
Turnaround Time:		WASTE C	HARACTERIZAT	ION 🖾 No	□Yes		2				ŧ				Memo Label
□Std. (10 Working-Days) □ Monthly □ 5 Working Days x 1.5 □ Emergency (By Quote)		Part 201:	7 No	Sample	· Containers	,	Le					. Professional			Phone Paper  Delivery Month
# Sample ID	Date	Time	TypSmp	Туре	Size	#	\								Remarks
Prulauchute Tank	0239	1 15p	aguerro	UNA	ifi)ne	24									
			1)	Trigen.	soone	2									
				Eg glas	11.	/									
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# Monitoring results from Orchard Hill Landfill: Sample Location OHL from 10/23/1996 to 10/23/1996

arameter		Result	***	<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
1,1,2,2-TETRACHLOROETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
,	٩VG	0 00						
1,1,2-TRICHLOROETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
,	AVG	0 00						
1,1-DICHLOROETHANE		4.80 ug/l		1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
,	AVG	4 80						
1,1-DICHLOROETHENE	_	0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1.15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
,2-DICHLOROETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
,	AVG	0 00						
1,2-DICHLOROPROPANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
I-1-1-TRICHLOROETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
BENZENE		7.80 ug/l		1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
,	AVG	7 80						
BROMOFORM		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
BROMOMETHANE		0.00 ug/i	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
CADMIUM		0.00	*	10.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
CARBON TETRACHLORIDE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
CHLOROBENZENE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						

<sup>\*</sup> indicates monitoring result below detection limit

# Monitoring results from Orchard Hill Landfill: Sample Location OHL from 10/23/1996 to 10/23/1996

'a <u>rameter</u>		Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
CHLOROETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
CHLOROFORM		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
CHLOROMETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
CIS-1,2-DICHLOROETHENE		3.50 ug/l		1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	3 50						
CIS-1,3-DICHLOROPROPENE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
COPPER		38.00 ug/l			10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	38 00						
CYANIDE		0.00	*	5.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
DIBROMOCHLOROMETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
DICHLOROBROMOMETHANE		0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
ETHYLBENZENE		18.00 ug/l		1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	18 00						
EAD		0.00	*	50.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
MERCURY		0.00	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	0 00						
METHYLENE CHLORIDE	·····	2.60 ug/l	· ·	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
	AVG	2 60						

<sup>\*</sup> indicates monitoring result below detection limit

# Monitoring results from Orchard Hill Landfill: Sample Location OHL from 10/23/1996 to 10/23/1996

Para <u>meter</u>	Result		<b>Detection Limit</b>	<u>Date</u>	Sample Type	<u>Time</u>	Reason for Analysis
NICKEL	43.00 ug/l			10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	43 00						_
PCBs	0.00	*	0 10 ug/l	10/23/1996	GRAB	1·15 00 PM	Semi-Annual Self Monitoring
AVG	0 00						
ETRACHLOROETHENE	0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	0 00						
OLUENE	110.00 ug/l	· · · · · · · · · · · · · · · · · · ·	1.00 ug/l	10/23/1996	GRAB	1:15.00 PM	Semi-Annual Self Monitoring
AVG	110 00						
TOTAL CHROMIUM	14.00 ug/l			10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	14 00						
TOTAL PETROLEUM HYDROCARBON	0.00	*	1.00 mg/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	0 00						
TRANS-1,2-DICHLOROETHENE	0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	0 00						
TRANS-1,3-DICHLOROPROPENE	0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	0 00						
TRICHLOROETHYLENE	0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	0 00						
TRICHLOROFLUOROMETHANE	0.00 ug/l	*	1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	0 00						
VINYLCHLORIDE	4.40 ug/i		1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	4 40						
XYLENE	64.00 ug/i		1.00 ug/l	10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	64 00						
ZINC	201.00 ug/l			10/23/1996	GRAB	1:15:00 PM	Semi-Annual Self Monitoring
AVG	201 00						

<sup>\*</sup> indicates monitoring result below detection limit

	Monitori	ng results fro	m Orchard	Hill Landfill: Sample	Location OF	HL from 10/23/199	6 to 10/23/199	96
Parameter pH	Ē	Result 7.10 S.U.		Detection Limit	<u>Date</u> 10/23/1996	Sample Type GRAB	<u>Time</u> 1:15:00 PM	Reason for Analysis
pii	AVG	7 10			10/23/1330	OIVAD	1.13.00 F W	Semi-Annual Self Monitoring

<sup>\*</sup> indicates monitoring result below detection limit

# KARLaboratories.Inc.



Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

KAR Project No.:

961327

Date Reported: Date Activated:

06/04/96 05/28/96

Date Due:

06/11/96

Attn: Mr. Ralph Balkema

Date Validated: 06/03/96

Phone b16 381 9666

Kalamazoo MI 49002

4425 Manchester Road

Fax 616 381 9698

Project Description: Analysis of two leachate samples.

Dear Client.

Your laboratory data is presented to you in this report. Unless otherwise stated under the "Comments" heading, all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and the result represents the sample as it was received.

If you wish to contact us about this work pease mention KAR Project No. 961327. To arrange additional sampling or tsting please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for the opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

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Michael J. Jaeger

Director of Laboratories

ORIGINAL



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KAR Project No.: 961327

Date Reported: 06/04/96

Project Description: Analysis of two leachate samples.

Sample ID: "New Cell Leachate"

Client: Orchard Hills Landfill

Sampled By: RB of Orchard Hills

Sample Date: 5/28/96Sample Time: 10.09 And SR

MAR Sample No.: 961327-02

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep ECD	Completed		EPA 3510	5/29/96	SAS	
PCB Aroclor 1016	<01	ug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclor 1221	<01	ug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclor 1260	<01	lug/L	EPA 8081	5/31/96	MSZ	
PCB Aroclors total	NA		EPA 8081	5/31/96	MSZ	

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# KAR Laboratories, Inc. (616-381-9666)

Clie	nt Orchard	- d/a S	20	P.O. #				Reques	ted Ana	alyses	····	- (				KAR use only
Attr	# One: Fax: Sam			# Of Samples   INT.     KAR   Client   Yes											Proj#:  Glo 1327  Date:  Login:  Source:  Memo Label	
1	Std (10 Working-Days)   Monthly						at								Phone Paper	
	5 Working-Days x 1.5 Emergency (By Quote)		Part 201:	No	Sample	Containers		$\langle z \rangle$								Delivery Month
#	Sample ID	Date	Time	TypSmp	Туре	Size	#	7								Remarks
	Old ('cll Loychate	5/28		95	SAO	16	1	$\vee$								
	New Cell Leachot	5528		as	GAIN	16-	/									
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		<del>, /</del>		L					1				Д	<u></u>		
Refin	aquished By:	Received By:	Mu	ya)	Date/Time: 5/28/9	6 4:07	Comm	ents:	<del></del>	72		)				
	ruished By:	Received By:		(	Date/Time:		Filterii	ng Requir	red:	□Yes	N N	b 	Da	te Filter	ed:	

# KARLaboratories.Inc.

Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo. MI 49007

960448 KAR Project No.:

03/04/96 Date Reported: Date Activated: 02/22/96

Date Due: 03/07/96

Date Validated: 03/04/96

Attn: Mr. Steven Rochow

Phone 616 381-9666

Kalamazoo, MI 49002

4425 Manchester Road

Fax 616 381-9698

Project Description: Analysis of one aqueous sample from Orchard Hills Landfill.

Dear Client,

Your laboratory data is presented to you in this report. Unless otherwise stated under the "Comments" heading, all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and the result represents the sample as is was received.

If you wish to contact us about this work please mention KAR Project No. 960448. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for the opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

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Michael J. Jaeger

Director of Laboratories

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KAR Project No.: 960448

Date Reported: 03/04/96

Client: Kalamazoo Water Reclamation Plant

Project Description: Analysis of one aqueous sample from Orchard Hills Landfill.

Sample ID: "Orchard Hill Landfill, OHL05396"

Sampled By SR of KWRP

Date Received : 2/22/96 Sample Type : aqueous

Sample Type: aqueous
Sample Date: 2/22/96

| Sample Time: 10:05am

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<01	ug/L	EPA 8080	2/26/96	MSZ	
FCB Aroclor 1221	<0.1	LG/L	EPA 3080	2/26/90	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080	2/26/96	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8080	2/26/96	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8080	2/26/96	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8080	2/26/96	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8080	2/26/96	MSZ	
PCB Aroclors, total	NA		EPA 8080	2/26/96	MSZ	

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ORCHARD HILL SANITARY LANDFILL
3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

February 12, 1996

Robert C. O'Day Public Services Department Waste Water Division 1415 N. Harrison Kalamazoo, Ml. 49007

Dear Bob,

We have received the results for the additional testing which you required due to the elevated Zinc levels Identified in our IPP monitoring.

In both cases the Zinc levels are within the allowable discharge limits at your facility. You will notice that the Zinc level has continued to decline.

You will find attached both the zinc analysis and the February PCB results.

If I can be of further assistance or if further testing is required please contact me at 616 463-5588

Sincerely,

Randy Blank

# KARLaboratories, Inc.

Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098 KAR Project No. : Date Reported :

960243

Date Activated :

01/31/96

Date Due :

02/14/96 02/08/96

Attn.: Mr. Ralph Balkema Date Validated:

Phone 616 381-9666

Kalamazoo MI 49002

4425 Manchester Road

Fax 616 381-9698

Project Description: Analysis of three aqueous samples.

Dear Client,

Your laboratory data is presented to you in this report. Unless otherwise stated under the "Comments" heading, all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and the result represents the sample as it was received.

If you wish to contact us about this work please mention KAR Project No. 960243. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for the opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

michael Jacq

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#### ANALYTICAL REPORT

KAR Project No.: 960243

Date Reported: 02/09/96

Project Description: Analysis of three aqueous samples.

Sample ID: "New Leachate"

Client: Orchard Hills Landfill

Sampled By: RB of Orchard Hills

Sample Date: 1/31/96

Sample Type: aqueous

Sample Time: 1:05pm

KAR Sample No.: 960243-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<01	ug/L	EPA 8080A	2/1/96	MSZ	
PCB Aroclor 1221	<01	ug/L	EPA 8080A	2/1/96		
PCB Arocior 1202	<0.1	ug/L	EPA 8080A	2/1/96		
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	2/1/96		
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	2/1/96	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	2/1/96		
PCB Aroclor 1260	<01	ug/L	EPA 8080A	2/1/96		
PCB Aroclors, total	NA NA		EPA 8080A	2/1/96	MSZ	

Sample ID: "New Leachate Tank"

Sampled By: RB of Orchard Hills

Date Received: 1/31/96

Sample Date: 1/31/96
Sample Time: 1:05pm
Sample No.: 960243-02

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Zinc, total	1 23	mg/L	EPA 200 7A	2/6/96	MTM	

Sample ID: "New Leachate Pre-Tank"

Sampled By: RB of Orchard Hills

Sample Date: 1/31/96

Sample Type: aqueous

Sample Time: 1:30pm

KAR Sample No.: 960243-03

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Zinc, total	0 99	mg/L	EPA 200 7A	2/6/96	MTM	

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KARLaboratories, Inc.

(616) 381-9666





ORCHARD HILL SANITARY LANDFILL
3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

January 19, 1996

Robert C. O'Day Public Services Department Waste Water Division 1415 N. Harrison Kalamazoo, MI. 49007

Dear Bob,

In compliance with your letter dated January 3, we have received the results for the additional testing which you required due to the elevated Zinc levels Identified in our IPP monitoring.

In all three cases the Zinc levels are within the allowable discharge limits at your facility.

The results of our further testing confirm our suspicion that the elevated Zinc came from the installation and start up of three new holding tanks and the galvanized plumbing associated with them. Prior to sampling very little leachate had been run through the system and what was in the tanks had set for about two weeks which could have increased the possibility of the elevated results.

As you examine the test results, in project number 960012 it is our belief that the results where transposed. Due to the circumstances pre tank levels should be considerably lower. It is also evident that the Zinc levels in our leachate coming out of the tanks, are on a decline which also supports this theory.

You will find attached both the zinc analysis and the January PCB results.

If I can be of further assistance or if further testing is required please contact me at 616 463-5588

Sincerely.

Ralph O. Balkema

# KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

Orchard Hills Landfill 3290 Hennessev Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

960012 KAR Project No.:

01/09/96 Date Reported:

Date Activated: 01/02/96 Date Due: 01/09/96

Date Validated: 01/09/96

Project Description: Analysis of two aqueous samples

Dear Client.

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 960012. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted.

Michael J. Jaeger

Director of Laboratories

#### ANALYTICAL REPORT

KAR Project No.: 960012

Date Reported: 01/09/96

Project Description: Analysis of two aqueous samples

Sample ID: "New Cell Leachate from Tank Top"

Client: Orchard Hills Landfill

Sampled By: Client

Sample Date: 1/2/96

Sample Type: aqueous

Sample Time: 2:10

KAR Sample No.: 960012-01

 Test
 Result
 Units of Measure
 Method
 Analyzed
 Analyst
 Comments

 Zinc, total
 0 94
 mg/L
 EPA 200 7A
 1/8/96
 MTM

Sample ID: "New Cell Leachate Pre Tank"

Sampled By: Client

Sample Date: 1/2/96

Sample Type: aqueous

Sample Time: 2:15

KAR Sample No.: 960012-02

Test	Result	Units of Measure	Method	Analyzed Analyst	Comments
Zınc, total	5 02	mg/L pp M	EPA 200 7A	1/8/96 MTM	

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KAR Laboratories, Inc.

(616) 381-9666

# KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002 (616) 381-9666

Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 960109

Date Reported : 01/17/96

Date Activated : 01/11/96

Date Due : 01/18/96

Date Validated: 01/17/96

Project Description: Analysis of one aqueous sample.

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 960109. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

# ANALYTICAL REPORT

KAR Project No.: 960109

Date Reported: 01/17/96

Project Description: Analysis of one aqueous sample.

"New Leachate Tank" Sample ID:

Sampled By: RB of Orchard Hills

Client: Orchard Hills Landfill

Sample Date : 1/11/96

Sample Time: 1:30pm

Date Received: 1/11/96

Sample Type :

aqueous

KAR Sample No.: 960109-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, total	<0 05	mg/L	EPA 200 7.A	1/10/96		Elevated detection limit due to sample matrix interference
Zınc, total	3.34	mg/L	EPA 200.7A	1/16/96	DBL	

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KAR Laboratories, Inc.

(616) 381-9666

4425 Manchester Road Kalamazoo, MI 49002



Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

 KAR Project No. :
 960014

 Date Reported :
 01/15/96

 Date Activated :
 01/02/96

 Date Due :
 01/16/96

 Date Validated :
 01/15/96

Project Description: Analysis of one aqueous sample

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 960014. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

hucharly

Michael J. Jaeger Director of Laboratories

KAR Project No.: 960014

Date Reported: 01/15/96

Project Description: Analysis of one aqueous sample

"New Leachate" Sample ID:

Client: Orchard Hills Landfill

Sampled By: Client Sample Date: 1/2/96 Date Received : 1/2/96 Sample Type :

aqueous

Sample Time : 2:30		KA	KAR Sample No.: 960014-01			
Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1015	<01	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8080A	1/8/96	MSZ	
PCB Aroclors, total	NA		EPA 8080A	1/8/96	MSZ	

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KAR Laboratories, Inc.

(616) 381-9666



# KALAMAZOO WATER RECLAMATION PLANT

#### INDUSTRIAL USER SELF-MONITORING REPORT

Facility: Orchard Hill Landfill

3378 Hennesy Road Watervliet MI 49098 **Due:** July 10, 1996

Reporting Period: January 1, 1996 - June 30, 1996

Sample Code: OHL

Location: Hauled waste prior to or during discharge at the Kalamazoo Water

Reclamation Plant.

Monitoring Requirements:

Pollutants	Daily Max.	Monthly Avg. Max.	<u>Unit</u>	Results	Sample Type
BETX	15		mg/l	• 1975	GRAB
CADMIUM	40		ug/l	1815	GRAB
COPPER	2230		ug/l	58	GRAB
CYANIDE	250		ug/l	<u> </u>	GRAB
LEAD	110		ug/l	<u> 50</u>	GRAB
MDNR SCAN 1				Attach Data	GRAB
MERCURY	0		ug/l	< 0.5	GRAB
NICKEL	1590		ug/l	109	GRAB
PCBs	0		ug/l	< 0.1	GRAB
TCLP (Annually)					GRAB
TOTAL CHROMIUM	4670		ug/l	_56	GRAB
TOTAL PETROLEUM HYDROCARBON	100		mg/l		GRAB
ZINC	5300		ug/l	2140	GRAB
pH	6.2 - 9.8		S.U.	6.8	GRAB

N/R indicates Not Required

PLEASE ATTACH COPIES OF LABORATORY RESULTS

Flow Information: 8000 Av	erage Daily (GPD) <u>15000</u> Maximum Daily (GPD)
Date and Time of Sampling:	Composite: 4-12-96 -1:55 PM
Grab:	Grab:
Grab:	Grab:

Note: If more than one batch is discharged on the day of sampling, please sample each batch and composite the samples prior to analysis.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to accure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations.

TCLP and PCB analysis must be conducted on an annual basis.

Contact:

Ralph O. Balkema

4-29-96

Date

Title:

**Construction Supervisor** 

#### LABORATORY REPORT

KAR Project No.: 960936

Client: Orchard Hills Landfill Date Reported: 04/26/96

Project Description: Analysis of one aqueous sample for IPP Monitoring.

Sample ID: "New Cell Leachate"

Sampled By: RB of Orchard Hills

Sample Date: 4/12/96Sample Type: aqueousSample Time: 1:55pmKAR Sample No.: 960936-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep, Hg	Completed		EPA 245 2	4/23/96	MTM	
Prep metals	Completed		EPA 30xx,200 x	4/16/96		
Cadmium, total	18 5	ug/L	EPA 200 7A	4/18/96	MTM	
Chromium, total	56	lug/L	EPA 200 7A	4/18/96	MTM	
Copper, total	58	ug/L	EPA 200 7A	4/18/96	MTM	
Lead, total, by ICP	<50	ug/L	EPA 200 7A	4/18/96	MTM	
Mercury total	<05	ug/L	EPA 245 2	4/24/96	MTM	
Nickel, total	109	ug/L	EPA 200 7A	4/18/96	MTM	······································
Zinc. total	2140	ug/L	EPA 200 7A	4/18/96	MTM	·
Cyanide, total	<20	ug/L	EPA 335 2	4/25/96	CAS	
PH	68	SU	EPA 150 1	4/12/96	CAS	
TPH (Gravimetric Method)	5	mg/L	EPA 413 1 mod	4/19/96	PML	· · · · · · · · · · · · · · · · · · ·
MDNR Scan 1 & 2	See below		EPA 8260	4/15/96	JAR	<del></del>
Prep. VOA, water	Completed	<del>                                     </del>	EPA 5030	4/15/96	JAR	
1.1.1-Trichloroethane	32	ug/L	EPA 8260	4/15/96	JAR	······································
1.1.2.2-Tetrachloroethane	<1	ug/L	EPA 8260	4/15/96	JAR	
1.1.2-Trichloroethane	<1	ug/L	EPA 8260	4/15/96	JAR	<del></del>
1.1-Dichloroethane	14	ug/L	EPA 8260	4/15/96	JAR	·
1.1-Dichloroethene	<1	ua/L	EPA 8260	4/15/96	JAR	
1.2-Dichloroethane	<1	ua/L	EPA 8260	4/15/96	JAR	
1.2-Dichloropropane	<1	ua/L	EPA 8260	4/15/96	JAR	· · · · · · · · · · · · · · · · · · ·
Benzene	4 5	ug/L	EPA 8260	4/15/96	JAR	
Bromodichloromethane	<1	ug/L	EPA 8260	4/15/96	JAR	
Bromoform	<1	ug/L	EPA 8260	4/15/96	JAR	<del></del>
Bromomethane	<1	ug/L	EPA 8260	4/15/96	JAR	
Carbon tetrachloride	<1	ug/L	EPA 8260	4/15/96	JAR	
Chlorobenzene	<1	ug/L	EPA 8260	4/15/96	JAR	
Chloroethane	<1	ug/L	EPA 8260	4/15/96	JAR	
Chloroform	<1	ug/L	EPA 8260	4/15/96	JAR	
Chloromethane	<1	ug/L	EPA 8260	4/15/96	JAR	
Cis-1,2-Dichloroethene	18	ug/L	EPA 8260	4/15/96	JAR	
Cis-1,3-Dichloropropene	<1	ug/L	EPA 8260	4/15/96	JAR	·
Dibromochloromethane	<1	ug/L	EPA 8260	4/15/96	JAR	
Ethylbenzene	11	ug/L	EPA 8260	4/15/96	JAR	
M-and/or p-xylene	31	ug/L	EPA 8260	4/15/96	JAR	
Methylene chloride	63	ug/L	EPA 8260	4/15/96	JAR	
O-Xylene	11	ug/L	EPA 8260	4/15/96	JAR	
Tetrachloroethene	11	ug/L	EPA 8260	4/15/96	JAR	
Toluene	140	ug/L	EPA 8260	4/15/96	JAR	
Trans-1,2-Dichloroethene	<1	ug/L	EPA 8260	4/15/96	JAR	
Trans-1,3-Dichloropropene	<1	ug/L	EPA 8260	4/15/96	JAR	
Trichloroethene	<1	ug/L	EPA 8260	4/15/96	JAR	
Trichlorofluoromethane	52	ug/L	EPA 8260	4/15/96	JAR	
Vinyl chloride	30	ug/L	EPA 8260	4/15/96	JAR	

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#### LABORATORY REPORT

KAR Project No.: 960936

Date Reported: 04/26/96

Project Description: Analysis of one aqueous sample for IPP Monitoring.

Sample ID: "New Cell Leachate"

Client: Orchard Hills Landfill

Sampled By:RB of Orchard HillsDate Received:4/12/96Sample Date:4/12/96Sample Type:aqueousSample Time:1:55pmKAR Sample No.:960936-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Prep, SV ECD, water	Completed		EPA 3510	4/15/96	SAS	
PCB Aroclor 1016	<0.1	ug/L	EPA 8081	4/15/96	MSZ	· · · · · · · · · · · · · · · · · · ·
PCB Aroclor 1221	<0.1	ug/L	EPA 8081	4/15/96	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8081	4/15/96	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8081	4/15/96	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8081	4/15/96	MSZ	······································
PCB Aroclor 1254	<0.1	ug/L	EPA 8081	4/15/96	MSZ	
PCB Aroclor 1260	<0.1	ug/L	EPA 8081	4/15/96	MSZ	
PCB Aroclors, total	NA		EPA 8081	4/15/96	MSZ	

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# KALAMAZOO WATER RECLAMATION PLANT

#### INDUSTRIAL USER SELF-MONITORING REPORT

Facility:

Orchard Hill Landfill

3378 Hennesy Road Watervliet MI 49098 Due:

January 10, 1996

Reporting Period: July 1, 1995 - December 31, 1995

Sample Code: OHL

Location: Hauled waste prior to or during discharge at the Kalamazoo Water

Reclamation Plant.

Monitoring Requirements:

<u>Pollutants</u>	Daily Max.	Monthly Avg. Max.	<u>Unit</u>	Results	Sample Type
BETX	15		mg/l	· 2503 male	GRAB
CADMIUM	40		ug/l	2744/2	GRAB
COPPER	2230		ug/l	100 1/2	GRAB
CYANIDE	250		ug/!	- 12 coule	GRAB
LEAD	110		ug/l	< 50 dg/j	GRAB
MDNR SCAN 1				Attach Data	GRAB
MERCURY	0		ug/l	LO.5 19/L	GRAB
NICKEL	1590		ug/l	300 ug/	GRAB
PCBs	0		ug/l	<001 ug/L	GRAB
TCLP					GRAB
TOTAL CHROMIUM	4670		ug/l	60 uy/L	GRAB
TOTAL PETROLEUM HYDROCARBON	l 100		mg/l	LI my/c	GRAB
ZINC	5300		ug/l	9.230m/	GRAB
рН	6.2 - 9.8		S.U.	6.4	GRAB

N/R indicates Not Required

PLEASE ATTACH COPIES OF LABORATORY RESULTS

Flow Information: 2/00	Average Daily (0	GPD) <u>200</u>	1000 Maximum Daily (GPD)
Date and Time of Sampling:	12-7-95	Composite: _	9:00Am
Grab:		Grab:	ten .
Grab:		Grah:	40

Note: If more than one batch is discharged on the day of sampling, please sample each batch and composite the samples prior to analysis.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

TCLP and PCB analysis must be conducted on an annual basis.

Contact:

Ralph O. Balkema

Title:

**Construction Supervisor** 

4425 Manchester Road Kalamazoo, MI 49002 (616) 381-9666

Orchard Hills Landfill 3290 Hennessey Road Watervliet, Ml 49098

Attn: Mr. Ralph Balkema

RECEIVED

DEC 26 1995

ORCHARD HILL LANDFILL KAR Project No.: 953696

Date Reported: 12/21/95

Date Activated : 12/07/95
Date Due : 12/21/95

Date Validated: 12/21/95

Project Description: Analysis of one aqueous sample for IPP Monitoring.

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 953696. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger Director of Laboratories

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KAR Project No.: 953696

Date Reported : 12/21/95

Project Description: Analysis of one aqueous sample for IPP Monitoring.

Sample ID: "New Leachate"

Client: Orchard Hills Landfill

Sampled By: ROB of Orchard Hills

Sample Date: 12/7/95

Sample Type: aqueous

Sample Time: 9:00am

KAR Sample No.: 953696-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium, total	27	ug/L	EPA 200 7A	12/15/95	DBL	
Chromium, total	60	ug/L	EPA 200 7A	12/15/95	DBL	
Copper, total	100	ug/L	EPA 200 7A	12/15/95	DBL	
Lead, total, by ICP	<50	ug/L	EPA 200 7A	12/15/95	DBL	
Mercury, total	<0.5	ug/L	EPA 245 2	12/15/95	MTM	
Nickel, total	300	ug/L	EPA 200 7A	12/15/95	DBL	
Zınc, total	9230	ug/L	EPA 200 7A	12/15/95	DBL	
Cyanide, total	<20	ug/L	EPA 335 2	12/20/95	CAS	
PH	6 4	SU	EPA 150 1	12/7/95	CAS	
TPH (Gravimetric Method)	<1	mg/L	EPA 413 1 mod	12/18/95	CAS	
MDNR Scan 1 & 2	See below		EPA 8260A	12/12/95	JAR	
1,1,1-Trichloroethane	23	ug/L	EPA 8260A	12/12/95	JAR	
1,1,2,2-Tetrachloroethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
1,1,2-Tnchloroethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
1,1-Dichloroethane	30	ug/L	EPA 8260A	12/12/95	JAR	
1,1-Dichloroethene	<1	ug/L	EPA 8260A	12/12/95	JAR	
1,2-Dichloroethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
1,2-Dichloropropane	<1	ug/L	EPA 8260A	12/12/95	JAR	
Benzene	5 3	ug/L	EPA 8260A	12/12/95	JAR	
Bromodichloromethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
Bromoform	<1	ug/L	EPA 8260A	12/12/95	JAR	
Bromomethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
Carbon tetrachlonde	<1	ug/L	EPA 8260A	12/12/95	JAR	
Chlorobenzene	<1	ug/L	EPA 8260A	12/12/95	JAR	
Chloroethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
Chloroform	<1	ug/L	EPA 8260A	12/12/95	JAR	
Chloromethane	<1	ug/L	EPA 8260A	12/12/95	JAR	
Cis-1 2-Dichloroethene	<1	ug/L	EPA 8260A	12/12/95	JAR	
Cis-1,3-Dichloropropene	<1	ug/L	EPA 8260A	12/12/95	JAR	
Dibromochloromethane	<1	u <u>a</u> /L	EPA 8260A	12/12/95	JAR	
Ethylbenzene	13	ug/L	EPA 8260A	12/12/95	JAR	
M-and/or p-xylene	41	ug/L	EPA 8260A	12/12/95	JAR	
Methylene chlonde	75	ug/L	EPA 8260A	12/12/95	JAR	
O-Xylene	14	ug/L	EPA 8260A	12/12/95	JAR	
Tetrachloroethene	15	ug/L	EPA 8260A	12/12/95	JAR	
Toluene	190	ug/L	EPA 8260A	12/12/95	JAR	
Trans-1,2-Dichloroethene	<1	ug/L	EPA 8260A	12/12/95	JAR	
Trans-1,3-Dichloropropene	<1	ug/L	EPA 8260A	12/12/95	JAR	

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KAR Laboratories, Inc.

(616) 381-9666

KAR Project No.: 953696

Date Reported : 12/21/95

Project Description: Analysis of one aqueous sample for IPP Monitoring.

Sample ID: "New Leachate"

Client: Orchard Hills Landfill

Sampled By: ROB of Orchard Hills

Sample Date: 12/7/95

Sample Type: aqueous

Sample Time: 9:00am

KAR Sample No.: 953696-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Trichloroethene	1 4	ug/L	EPA 6260A	12/12/95	JAR	
Trichlorofluoromethane	71	ug/L	EPA 8260A	12/12/95	JAR	
Vinyl chlonde	<1	ug∕L	EPA 8260A	12/12/95	JAR	
PCB Aroclor 1016	<01	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8080A	12/14/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	12/14/95	MSZ	

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KAR Laboratories, Inc.

Clie	nt Orchards	Hills		P.O. #				Req	uestec	d Anai	yses			<del></del>		KAR use only
Attri:		Oblina Fax:	Collected	# Of Sam Sampled     KAR     Client d By:	 By:						Poblan m	¬	0			Proj#:  1530  Date:  1979  LogIn: Source:  Memo Label
, Ø 8	Std. (10 Working-Days) 5 Working-Days x 1.5 5 Emergency ( By Quote) Sample ID	Date	Part 201. ☐ Yes	: No TypSmp	MUSTFA □ Yes	: No Bottle		PCB	410-	1/70	3	4	Jean 14			Phone Paper  Delivery Month  Remarks
	New leachato	12/7	9:000		Type GA <sub>m</sub>	Size	#	1		0	0		-07		 	
				0	So 5 Prom	11	1		<b>V</b>	J						
					P	500mL					J	J				
	-				YC	250AL 20ML	2					7	J			
1 -																
Rel	inquished By:	Ban	le_		Date/Tir	ne:	Comr		:: ::						<del></del>	
	wed By:	Kan			Date/Tir	ne: 15 4/0p		+		<del></del>						

4425 Manchester Road Kalamazoo, MI 49002



Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 953251

Date Reported : 11/02/95
Date Activated : 10/26/95
Date Due : 11/02/95

Date Validated: 11/02/95

Project Description: Analysis of one leachate sample.

Dear Client,

Jood 21 - 11.7-95

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 953251. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

huchae ()

**Director of Laboratories** 

KAR Project No.: 953251

Client: Orchard Hills Landfill Date Reported: 11/02/95

Project Description: Analysis of one leachate sample.

Sample ID: "New Leachate Tank, Grab"

Sampled By: Client

Sample Date: 10/26/95

Sample Type: aqueous

Sample Time: 10:30am

KAR Sample No.: 953251-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<01	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclor 1221	<0.1	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8080A	10/31/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	10/31/95	MSZ	

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KAR Laboratories, Inc.

(616) 381-9666

4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

lade 134/4

Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952857

09/20/95 Date Reported: Date Activated: 09/18/95 Date Due: 09/20/95

Date Validated: 09/20/95

Project Description: Analysis of one leachate sample.

KAR I ARS

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements. and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 952857. To arrange additional sampling or testing please contact our Client Services Manager. Julie Addy. If you have a question regarding quality assurance please contact William Rauch

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

KAR Project No.: 952857

Date Reported: 09/20/95

Project Description: Analysis of one leachate sample.

Sample ID: "New Leachate Grab"

Client: Orchard Hills Landfill

Sampled By: RB of Orchard Hills

Sample Date: 9/18/95

Sample Time: 8:35am

Date Received: 9/18/95 Sample Type: aqueous

KAR Sample No.: 952857-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<0.1	ug1	EPA 8080A	9/19/95	MSZ	
PCB Aroclor 1221	<0.1	lug/L	EPA 8080A	9/19/95	MSZ	
PCB Aracior 1232	<0.1	ug/L	EPA 8080A	9/19/95	MSZ	
PCB Arccior 1242	<0.1	ug/L	EPA 8080A	9/19/95	MSZ	
PCB Aroclor 1248	<0.1	ugh	EPA 8080A	9/19/95	MSZ	
PCB Aroclor 1254	<0.1	ug/L	EPA 8080A	9/19/95	MSZ	
PCB Aroclor 1250	<0.1	ugl	EPA 8080A	9/19/95	MSZ	
PCB Arcciors, total	NA		EPA 8080A	9/19/95	MSZ	

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KAR Laboratories, Inc.

(616) 381-9666

4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

Orchard Hills Landfill 3290 Hennessev Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952767

09/12/95 Date Reported: Date Activated: 09/08/95 09/12/95 Date Due:

Date Validated: 09/12/95

Project Description: Analysis of one leachate sample.

Dear Client.

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received

In the event that you need to contact us about this work please mention KAR Project No 952767. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance

Respectfully submitted,

Michael J Jaeger

Director of Laboratories

KAR Project No.: 952767

Date Reported: 09/12/95

Client: Orchard Hills Landfill

Project Description: Analysis of one leachate sample.

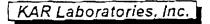
Sample ID: "New Cell Leachate"

Sampled By: Client Sample Date: 9/8/95 Sample Time: 2:30pm Date Received: 9/8/95 Sample Type : aqueous

KAR Sample No.: 952767-01

						<del></del>
Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Arodor 1221	<0.1	ugl	EPA 8080A	9/12/95	MSZ	
PCB Arccior 1232	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	9/12/95	MSZ	
PCB Arocior 1254	<01	ug/L	EPA 8080A	9/12/95	MSZ_	
PCB Aroclor 1260	<01	nav	EPA 8080A	9/12/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	9/12/95	MSZ	

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4425 Manchester Road Kalamazoo, MI 49002 (616) 381-9666

Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952619

 Date Reported :
 08/29/95

 Date Activated :
 08/25/95

 Date Due :
 08/29/95

Date Validated: 08/29/95

Lord 99-10

Project Description: Analysis of one aqueous sample.

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 952619. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

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Client: Orchard Hills Landfill

### ANALYTICAL REPORT

KAR Project No.: 952619

Date Reported: 08/29/95

Project Description: Analysis of one aqueous sample.

Sample ID: "New Cell Leachate Grab"

Sampled By: Client

Date Received: 8/25/95

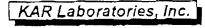
Sample Date: 8/25/95

Sample Type: aqueous

KAR Sample No.: 952619-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<01	υσ⁄L	EPA 8080A	8/28/95	KTL	
PCB Arodor 1221	<01	ug/L	EPA 8080A	8/28/95	KTL	
PCB Aroclor 1232	<01	ugh	EPA 8080A	8/28/95	KTL	
PCB Araclor 1242	<01	ug/L	EPA 8080A	8/28/95	KTL	
PCB Aroclor 1248	<01	ug/L	EPA 8080A	8/28/95	KTL	
PCB Arodor 1254	<01	ug/L	EPA 8080A	8/28/95	KTL	
PCB Aroclor 1260	<01	ug/L	EPA 8080A	8/28/95	KTL_	
PCB Arociors, total	<01	ug/L	EPA 8080A	8/28/95	KTL	

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08/22/95

KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

Orchard Hills Landfill 3290 Hennessey Road Watervliet, Ml 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952538

 Date Reported :
 08/22/95

 Date Activated :
 08/18/95

 Date Due :
 08/22/95

Date Validated:

Project Description: Analysis of one aqueous sample.

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 952538. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J Jaeger
Director of Laboratories

KAR Project No.: 952538

Date Reported: 08/22/95

Project Description : Analysis of one aqueous sample.

Sample ID: "Leachate New Cell, Grab"

Sampled By: ROB of Orchard Hills Landfill

Client: Orchard Hills Landfill

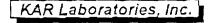
Sample Date : 8/18/95

Date Received: 8/18/95

Sample Type: aqueous KAR Sample No.: 952538-01

Sample Time : 1:30pn	1		KAR Sample No.: 952538-01			
Test	Result	Units of Measure	Method	Analyzed	Analyst	Conunents
PCB Aroclor 1016	<01	υg/L	EPA BOBOA	8/22/95	MSZ	
PCB Aroclor 1221	<01	ug/L	EPA 8080A	8/22/95	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080A	8/22/95	MSZ	
PCB Araclor 1242	<01	ug/L	EPA 8080A	8/22/95	MSZ	
PCB Aroclor 1248	<01	uc/L	EPA 8080A	8/22/95	MSZ	
PCB Araclor 1254	<01	υσ⁄L	EPA 8080A	8/22/95	MSZ	
PCB Aroclar 1260	<01	uar	EPA 8080A	8/22/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	8/2295	MSZ	

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4425 Manchester Road Kalamazoo, MI 49002



Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952461

08/15/95 Date Reported: Date Activated: 08/11/95 Date Due: 08/15/95

Date Validated: 08/15/95

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Project Description: Analysis of one leachate sample.

Dear Client.

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received

In the event that you need to contact us about this work please mention KAR Project No. 952461. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

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Director of Laboratories

KAR Project No.: 952461

Date Reported: 08/15/95

Client: Orchard Hills Landfill

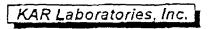
Project Description: Analysis of one leachate sample.

Sample ID: "Leachate, New Cell"

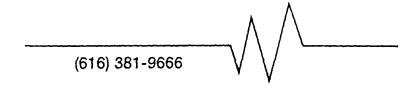
Sampled By: Client Sample Date: 8/11/95 Date Received: 8/11/95 Sample Type : aqueous KAR Sample No.: 952461-01

Sample Time: 1:20pm	)		KAR Sample No.: 952461-01				
Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments	
PCB Arodor 1016	<0.1	ug/L	EPA 8080A	8/15/95	MSZ		
PCB Arcclor 1221	<0.1	ug/L	EPA 8080A	8/15/95	MSZ		
PCB Aroclor 1232	<0.1	ug/L	EPA 8080A	8/15/95	MS2		
PCB Aroclor 1242	<0.1	ug/L	EPA 8080A	8/15/95	MSZ		
PCB Aroclor 1248	<0.1	ug/L	EPA 8080A	8/15/95	MSZ		
PCB Arodor 1254	<0.1	ug/L	EPA 8080A	8/15/95	MSZ		
PCB Aroclor 1260	<0.1	ugl	EPA 8080A_	8/15/95	MSZ		
PCB Aroclors, total	NA		EPA 8080A	8/15/95	MSZ		

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4425 Manchester Road Kalamazoo, MI 49002



Date Due:

Kalamazoo Water Reclamation Plant

1415 N. Harrison Kalamazoo, MI 49007

Attn: Mr. Tim Meulenberg

KAR Project No.: 952366

Date Reported : 08/10/95
Date Activated : 08/04/95

Date Validated: 08/10/95

08/18/95

Project Description: Analysis of one aqueous sample from Orchard Hills (KWRP C-of-C #14321)

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 952366. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

KAR Project No.: 952366

Date Reported: 08/10/95

Client: Kalamazoo Water Reclamation Plant

Project Description: Analysis of one aqueous sample from Orchard Hills (KWRP C-of-C

#14321)

"Orchard Hill Landfill, 21595" Sample ID:

Sampled By: TM of KWRP Date Received : 8/4/95 Sample Type: aqueous Sample Date: 8/3/95 KAR Sample No.: 952366-01 Sample Time: 1:35pm

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<0.1	ug/L	EPA 3080A	8/7/95	MSZ	
PCB Aroclor 1221	<01	ug/L	EPA 8080A	8/7/95	MSZ	
PCB Aroclor 1232	<01	ug/L	EPA 8080A	8/7/95	MSZ	
PCB Aroclor 1242	<01	ug/L	EPA 8080A	8/7/95	MSZ	
PCB Aroclor 1248	<01	ug/L	EPA 8080A	8/7/95	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8080A	8/7/95	MSZ	
PCB Aroclor 1260	<01	ug/L	EPA 8080A	8/7/95	MSZ	
PCB Aroclors, total	NA		EPA 8080A	8/7/95	MSZ	

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KAR Laboratories, Inc.

(616) 381-9666

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4425 Manchester Road Kalamazoo, MI 49002



Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952266

Date Reported: 08/01/95

Date Reported: 08/01/95
Date Activated: 07/28/95
Date Due: 08/01/95

Date Validated: 08/01/95

Project Description: Analysis of one leachate sample.

Dear Client,

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No. 952266. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger Director of Laboratories

KAR Project No.: 952266

Date Reported: 08/01/95

7/28/95

Date Received ;

Project Description: Analysis of one leachate sample.

Sample ID: "New Cell"

Sampled By: ROB of Orchard Hills

Client: Orchard Hills Landfill

Sample Date: 7/28/95

Sample Type: aqueous KAR Sample No.: 952266-01 Sample Time: 1:15pm

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	7/31/95	MSZ	
PCB Aroclar 1221	<0.1_	ug/L	EPA 8080A	7/31/95	MSZ	
PCB Aroclor 1232	<0.1	ug/L	EPA 8080A	7/31/95	MSZ	
PCB Arodor 1242	<01	ug/L	EPA 8080A	7/31/95	MS2	
PCB Arodor 1248	<01	ugh	EPA 8080A	7/31/95	MSZ	
PCB Aroclor 1254	<01	ug/L	EPA 8080A	7/31/95	MSZ	
PCB Aroclor 1260	<01	UQL	EPA 8080A	7/31/95	MSZ	
PCB Arociors, total	NA		EPA 8080A	7/31/95	MSZ	

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KAR Laboratories, Inc.

# KALAMA, JO WATER RECLAMA JON PLANT

INDUSTRIAL USER SELF-MONITORING REPORT

Due: July 10; 1995

Facility: Orchard Hill Landfill

> 3378 Hennesy Road Watervliet, MI 49098

Reporting Period: January 1, 1995 - June 30, 1995

Sample Code: OHL

Location: Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.

#### Monitoring Requirements:

<u>Pollutants</u>	<u>Daily Max.</u> mg/L	Results/Units	Sample Type
Cadmium, T	0.040	< 0.005	Grab
Chromium, T	4.67	40,01	Grab
Copper, T	2.23	40.02	Grab
Lead, T	0.110	<u> </u>	Grab
Nickel, T	1.59	20.02	Grab
Zinc, T	5.30	40.01	Grab
Cyanide, T	0.250	LO.02	Grab
Petroleum Hydrocarbon	100		Grab
pH	6.2-9.8 S.U.	7.3	Grab
Mercury, T	prohibited	20,0005	Grab
PCBs, T	prohibited	/ Annual -	Grab
TCLP		Annual -  Annual -	Grab
MDNR Scans 1 & 2		AHacled	Grab

N/R indicates "Not Required" PLEASE ATTACH COPIES OF LABORATORY RESULTS

Flow Information:	8000	Average Daily	24000	Maximum	Daily
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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jerry Miller
Ralph Balkema

4425 Manchester Fload Kalamazoo, MI 49002 (616) 381-9666

Orchard Hills Landfill 3290 Hennessey Road Watervliet, Ml 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 951933

 Date Reported :
 07/07/95

 Date Activated :
 06/29/95

 Date Due :
 07/07/95

Date Validated: 07/07/95

Project Description: Leachate analysis for IPP Monitoring.

Dear Client.

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No 951933. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch.

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance

Respectfully submitted,

Michael J Jaeger Director of Laboratories

KAP Laboratories Inc. maintains Full Certification status for Bacteriology, Inorganics, Regulated Organics and Synthetic Organics through Michigan Department of Public Health and USEPA. This report may only be reproduced in full and not without the written consent of Orchard Hills Landfill.

KAR Project No.: 951933

Date Reported: 07/07/95

Client: Orchard Hills Landfill

Project Description: Leachate analysis for IPP Monitoring.

"Leachate" Sample ID:

Sampled By: ROB of Orchard Hills Landfill Date Received: 6/29/95 Sample Date: 6/29/95 Sample Type : aqueous KAR Sample No.: 951933-01 Sample Time: 10:30am

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Cadmium total	<0.005	mg/L	EPA 6010A	7/5/95	MTM	
Chromium, total	<0.01	mg/L	EPA 6010A	7/5/95		
Copper, total	<0.02	mg/L	EPA 6010A	7/5/95	MTM	
Lead, total	<0.002	mg/L	EPA 7421	7/6/95	MTM	
Mercury, total	<0.0005	mg/L	EPA 7470A	7/8/95	MTM	
Nickel, total	<0.02	mg/L	EPA 6010A	7/5/95	MTM	
Zinc, total	< 0.01	mo/L	EPA 6010A	7/5/95	MTM	
TCLP extraction	Completed		EPA 1311	7/3/95	CCP	
ZHE extraction	Completed		EPA 1311	7/2/95	CCP	
Cyanide, total	<0.02	mg/L	EPA 335.2	6/30/95	CAS	
PH	7.3	S.U.	EPA 150.1	6/29/95		
MDNR Scan 1 & 2	See below		EPA 8250A	7/8/95	JAR .	
1,1,1-Trichloroethane	<1	ual	EPA 8260A	7/6/95	JAR	
1,1,2,2-Tetrachloroethane	<1	ug/L	EPA 8260A	7/6/95	JAR	
1,1.2-Trichleroethane	<1	ug/L	EPA 8260A	7/6/95	JAR	
1,1-Dichlorpethane	<1	ug/L	EPA 8260A	7/6/95	JAR	
1,1-Dichloroethene	<1	ug/L	EPA 8260A	7/6/95	JAR	
1,2-Dichloroethane	<1	ugl	EPA 8260A	7/6/95	JAR	
1,2-Dichloropropane	<1	ug/L	EPA 8260A	7/6/35	JAR	
Benzene	<1	ug/L	EPA 8260A	7/5/95	JAR	
<i>Bromodichloromethane</i>	<1	ugl	EPA 8260A	7/8/95	_JAR	
<i>Eromoform</i>	<1	ug/L	EPA 8260A	7/6/95	JAR	
Bromomethane	<1	ug/L	EPA 8260A	7/6/95	JAR	
Carbon tetrachloride	<1	ugl	EPA 8260A	7/5/95	JAR	
Chlorobenzene	<1	ug/L	EPA 8260A	7/6/95	JAR	
Chloroethane	<1	ugl	EPA 8250A	7/6/95	JAR	
Chioroform	<1	ug/L	EPA 8260A	7/8/95	JAR	
Chloromethane	<1	nav	EPA 8250A	7/6/95	JAR	
Cis-1.2-Dichloroethene	<1	ucl	EPA 8260A	7/6/95	JAR	
Cis-1,3-Dichloropropene	<1	Ug/L	EPA 8260A	7/5/95	JAR	
Dibromochloromethane	<1	ugr	EPA 8260A	7/6/95	JAR	
Ethylbenzene	<1	υ <b>σ∕</b> L	EPA 8260A	7/6/95	JAR	
M-and/or p-xylene	<1	ugl	EPA 8260A	7/6/95	JAR	
Methylene chloride	<1	ugl	EPA 8260A	7/6/95	JAR	
O-Xylene	<1	ugl	EPA 8260A	7/6/95	JAR	
Tetrachloroethene	<1	ug/L	EPA 8260A	7/5/95	JAR	
Toluene	<1	ugl	EPA 8260A	7/6/95	JAR	
Trans-1,2-Dichloroethene	<1	ugl	EPA 8260A	7/8/95	JAR	

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KAR Laboratories, Inc.

KAR Project No.: 951933

Date Reported: 07/07/95

Client: Orchard Hills Landfill

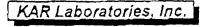
Project Description: Leachate analysis for IPP Monitoring.

Sample ID: "Leachate"

Sampled By: ROB of Orchard Hills Landfill Date Received: 6/29/95 Sample Date: 6/29/95 Sample Type: aqueous KAR Sample No.: 951933-01 Sample Time: 10:30am

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
Trans-1,3-Dichloropropene	<1	ugl	EPA 8260A	7/6/95	JAR	
Trichloroethene	<1	UOL	EPA 8260A	7/6/95	JAR	
Trichlorofluoromethane	<1	ug/L	EPA 8260A	7/8/95	JAR	
Vinyl chloride	<1	ug/L	EPA 8260A	7/5/95	JAR	
PCB Aroclor 1016	<0.1	ug/L	EPA 8080A	7/7/95	MSZ	
PCB Arocior 1221	<0.1	ugl	EPA 8080A	7/7/95	MSZ	
PCB Aroclor 1232	<0.1	ugl	EPA 8080A	7/7/95	MSZ	
PCB Aroclor 1242	<01	lugh	EPA 8080A	7/7/95	MSZ	
PCB Aroclor 1248	<0.1	ugh	EPA 3080A	7/7/95	MSZ	
PCB Aroclor 1254	<01	uol	EPA 8080A	7/7/95	MSZ	
PCB Amelor 1260	<01	ug/L_	EPA 8080A	7/7/95	MSZ	
PCB Aradors, total	NA		EPA 8080A	7/7/95	MSZ	

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Client: Orchard Hills Landfill

### ANALYTICAL REPORT

KAR Project No.: 951933

Date Reported: 07/07/95

Project Description: Leachate analysis for IPP Monitoring.

Sample ID: TCLP Leachate of Leachate, 12/9/93, 2:30

Sampled By:

Sample Date:

Sample Time:

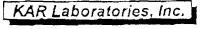
Date Received: 6/29/95

Sample Type: TCLP

KAR Sample No.: 951933-01T

Result Test Units of Measure Method Analyzed Analyst Comments EPA 6010A <01 mg/L 7/5/95 Arsenic, total by ICP MTM TC regulatory limit is 5.0 mg/L MTM | TC regulatory ||mr. is 100 0 mg/L Banum, total <0.05 EPA 6010A mg/L 7/5/95 <0 005 mg/L EPA 6010A MTM | TC regulatory limit is 1.0 mg/L Cadmium, total 7/5/95 Chromium, total <0.01 mg/L EPA 6010A 7/5/95 MTM TC regulatory limit is 50 mg/L Copper total <0.02 EPA 6010A 7/5/95 MTM | TC regulatory limit is 100 0 mg/L mgLLead, total by ICP <0.05 7/5/95 mg/L EPA 5010A MTM | TC regulatory limit is 50 mol Mercury, total <0 0005 mg/L EPA 7470A 7/6/95 MTM | TC regulatory limit is 0.2 mg/L TC regulatory limit is 10 mg/L Selenium total, by ICP <01 EPA 6010A 7/5/95 MTM mg/L <0 005 Silver total mg/L EPA 6010A 7/5/95 MTM | TC regulatory innut is 5.0 mg/L <0.01 EPA 6010A 7/5/95 MTM TC regulatory limit is 500 0 mg/L Znc, total mg/L See below EPA 8270B KTL 7/6/95 TC Semi-Volatiles 2 4 5-Trichlorophenol <0.01 EPA 8270B 7/6/95 KTL TC regulatory limit is 400 0 most mgL2 4 6-Trichlorophenol < 0 01 mg/LEPA 8270B 7/6/95 KTL TC regulatory limit is 20 mg/2 <0 01 EPA 8270B 7/6/95 KTL 2 4-Dinitrotoluene mg/L TC regulatory limit is 0 13 mg/L <001 Cresols EPA 8270B 7/6/95 KTL TC regulatory limit is 200 0 mg/L mg/L<001 7/6/95 KTL Hexachlorobenzene mg/1EPA 8270B TC regulatory limit is 0 13 mg/L <0.01 EPA 8270B 7/6/95 KTL Hexachlorobutadie<u>ne</u> mg/L TC regulatory limit is 0.5 mg/L TC regulatory limit is 3.0 mg/L Hexachloroethana < 0 01 mo/LEPA 8270B 7/6/951 ŔŤĹ <0.01 EPA 8270B 7/6/95 Nitrobenzene mq1KTL TC regulatory limit is 2.0 mg/L 7/5/95 KTL Pentachiorophenol mg/LEPA 8270B <0.01 TC regulatory lim\* is 100 0 mg/L 7/6/95 KTL Pyndine <001 EPA 8270B TC requietory limit is 5.0 mg/L mg/L Chiordane <0.03 mg/LEPA 8270B 7/5/95 KIL TC regulatory limit is 0 03 mg/L £ndπn <0.01 mg/L EPA 8270B 7/6/95 KTL TC regulatory limit is 0.02 mg? mq/17/6/95 KTL <0.008 EPA 8270B TC regulatory limit is 0 008 mg/L Heptachlor EPA 82708 7/6/95 Heptachlor epoxide < 0.008 KTL TC regulatory limit is 0 008 mg/L mg/L <0 01 EPA 8270B 7/6/95 KTL TC regulatory limit is 0.4 mg/L Undane mg/L EPA 8270B 7/5/95 < 0 0 1 KTL TC regulatory limit is 10.0 mg/L Methoxychlor mg/LToxaphene <05 mg/L EPA 8270B 7/5/95 KTL TC regulaton limit is 0.5 most MSZ 7/5/95 TC real story limit is 1.0 mail. 2,45-TP (Silvex) <0.01 mg/L EPA 8150B MSZ EPA 8150B 7/6/95 TC regulatory limit is 10 0 mg/L 240 <0.01 mg/L

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KAR Project No.: 951933

Date Reported: 07/07/95

Client: Orchard Hills Landfill

Project Description: Leachate analysis for IPP Monitoring.

Sample ID: ZHE Leachate of Leachate, 12/9/93, 2:30

Sampled By:

Date Received: 6/29/95 Sample Type: ZHE

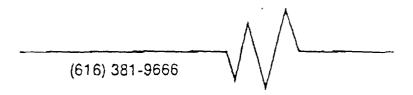
Sample Date:

Sample Time :				KAR Sample No. : 951933-01Z			
Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments	
TC Volatiles	See below	1	EPA 8260A	7/6/95	JAR		
1,1-Dichloroethene	<0.001	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory firmt is 0.7 mg/L	
1,2-Dichloroethane	< 0.001	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory limit is 0.5 mg/L	
1,4-Dichlorobenzene	<0.001	mg/L	EPA 8260A	7/8/95	JAR	TC regulatory limit is 7.5 mg/L	
Benzene	<0 001	mg/L_	EPA 826CA	7/5/95	JAR	TC regulatory limit is 0.5 mg/L	
Carbon tetrachloride	<0.001	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory limit is 0.5 mg/L	
Chlorobenzene	< 0.001	mg/L	EPA 8260A	7/5/35	JAR	TC regulatory firms is 100 C mg/_	
Chloroform	< 0.001	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory limit is 60 mg/L	
Methyl ethyl ketone	<0.02	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory fimit is 200 0 mg/L	
Tetrachloroethene	<0 001	mg/L	EPA 8260A	7/5/95	JAR	TC regulatory limit is 0.7 mg/L	
Trichloroethene	<0 001	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory firmit is 0.5 mg/L	
Vinyl chloride	<0 001	mg/L	EPA 8260A	7/6/95	JAR	TC regulatory limit is 0.2 mg/L	

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KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002



Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

KAR Project No.: 952058

Date Reported : 07/11/95

Date Activated : 07/10/95

Date Due : 07/11/95

Date Validated : 07/11/95

Project Description: Analysis of one aqueous sample.

TPH for IPP, monitoring

Dear Client.

This laboratory report represents KAR Laboratories' analysis of samples associated with the above-referenced project. Unless otherwise stated (under "Comments" heading) all tests were performed within the maximum allowable holding times, have met or exceeded QC requirements and results represent the samples as they were received.

In the event that you need to contact us about this work please mention KAR Project No 952058. To arrange additional sampling or testing please contact our Client Services Manager, Julie Addy. If you have a question regarding quality assurance please contact William Rauch

Thank you for this opportunity to serve you. Please do not hesitate to call if we can provide additional assistance.

Respectfully submitted,

Michael J. Jaeger

Director of Laboratories

KAR Project No.: 952058

Date Reported: 07/11/95

Project Description: Analysis of one aqueous sample.

Sample ID: "Leachate Grab"

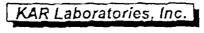
Client: Orchard Hills Landfill

Sampled By: Client
Sample Date: 7/10/95
Sample Time: 11:40am

Date Received: 7/10/95
Sample Type: aqueous
KAR Sample No.: 952058-01

Test	Result	Units of Measure	Method	Analyzed	Analyst	Comments
TPH (Gravimetric Method)	<1	mg/L	EPA 413.1 mod	7/10/95	CCP	

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# KALAMAZ O WATER RECLAMA ON PLANT

INDUSTRIAL USER SELF-MONITORING REPORT

Orchard Hill Landfill Facility:

Due: January 10, 1995

3290 3378 Hennesy Road Watervliet, MI 49098

Reporting Period: July 1, 1994 - December 31, 1994

Sample Code:

OHL

Location: Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.

#### Monitoring Requirements:

<b>Pollutants</b>	Daily Max.	Results/Units	Sample Type
	<u>mg/L</u>		
Cadmium, T	0.040	40.005 my/L	Grab
Chromium, T	4.67	0.09 mg/L	Grab
Copper, T	2.23	0.30 mg/s	Grab
Lead, T	0.110	<0. 025 My/L	Grab
Nickel, T	1.59	O: 38 My/	Grab
Zinc, T	5.30	1.02 My/1	Grab
Cyanide, T	0.250	0,02 mg/c	Grab
Petroleum Hydrocarbon	100	2 m;/L	Grab
рН	6.2-9.8 S.U.	8.5 S.U.	Grab
Mercury, T	prohibited	LO. 0005Mg/L	Grab
PCBs, T	prohibited	Annual - Dec	Grab
TCLP		Annual - Dec	Grab
MDNR Scans 1 & 2		See Analytical	Grab

N/R indicates "Not Required" PLEASE ATTACH COPIES OF LABORATORY RESULTS

Flow Information: 3500 gallons Average Daily 16600 gal Maximum Daily

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Jerry Miller Ralph O. Balkema

<u>7-7-94</u> Date

Ralph O Balkema

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	^ ^
(616) 381-9666	

### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennessey Road

Watervliet, MI 49098

Attn: Mr. Ralph Balkema

. JUL 7 1994 Proj. No.: 941826
Client No.: 2336
Date Activated: 6/21/94
Date Promised: 7/06/94
Date Reported: 7/06/94

PO#:

Project Desc.: Analysis of one leachate sample for IPP Monitoring.

### Dear Client:

Attached you will find test results for Project No. 941826. Please refer to this Project No. if you have any questions regarding this work. Unless noted otherwise all tests were performed within the maximum U.S. EPA allowable holding times.

Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger

Director of Laboratories

KAR Laboratories, Inc. Page 1

### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 941826
Report Date: 7/06/94

Project Desc.: Analysis of one leachate sample for IPP Monitoring.

Sample No.:941826-01 Type:aqueous Rec'd: 6/21/94

Sampled: 6/21/94 1:30pm By:ROB of Orchard Hills

ID: "Leachate"

 Cadmium, total
 <0.005 mg/L</td>

 Chromium, total
 0.09 mg/L

 Copper, total
 0.30 mg/L

 Lead, total
 <0.025 mg/L</td>

Elevated detection limit due to sample matrix interference.

MDNR Scan 1 & 2 See attached

Elevated detection limit due to sample matrix interference.

Unless otherwise noted, test results represent the sample(s) as they were received.

### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 941826 Report Date: 7/06/94 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one leachate sample for IPP Monitoring.

Sample No.:941826-01 Type:aqueous Rec'd: 6/21/94

Sampled: 6/21/94 1:30pm By:ROB of Orchard Hills

Sample ID: "Leachate"

### SCAN 1 - Purgeable Halocarbons

Duomadiahlawamathana	,-	turns 1 2 Dishlawarthans	
Bromodichloromethane	<5	trans-1,2-Dichloroethene	<5
Bromoform	<5	1,2-Dichloropropane	<5
Bromomethane	<5	cis-1,3-Dichloropropene	<5
Carbon tetrachloride	<5	trans-1,3-Dichloropropene	<5
Chlorobenzene	<5	Methylene chloride	23
Chloroethane	<5	1,1,2,2-Tetrachloroethane	<5
Chloroform	<5	Tetrachloroethene	<5
Chloromethane	<5	1,1,1-Trichloroethane	<b>&lt;</b> 5
Dibromochloromethane	<5	1,1,2-Trichloroethane	<5
1,1-Dichloroethane	<5	Trichloroethene	<5
1,2-Dichloroethane	50	Trichlorofluoromethane	<5
1,1-Dichloroethene	<5	Vinyl chloride	<5
cís-1,2-Díchloroethene	33	<del>-</del>	

### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	13	m-and/or p-Xylene	51
Ethyl benzene	20	o-Xylene	24
Toluene	190	-	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

< (less than) indicates NOT DETECTED, followed by the limit of detection.

EPA Method 8260

### KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002



### ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo, MI 49007

Attn: Mr. Tim Meulenberg

Proj. No.: 943746 Client No.: 0399 Date Activated: 12/08/94

Date Activated: 12/08/94
Date Promised: 12/22/94
Date Reported: 12/22/94

PO#: 071565

Project Desc.: Analysis of an aqueous sample from Orchard Hills Landfill

KWRP #13304.

### Dear Client:

Attached you will find test results for Project No. 943746. Please refer to this Project No. if you have any questions regarding our work. Unless noted otherwise all tests were performed within the maximum U.S. EPA allowable holding times.

Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger

trichael

Director of Laboratories

To: Kalamazoo Water Reclamation Plant Project No: 943746

Re: Analysis of an aqueous sample from Orchard Hills Landfill KWRP #13304.

Sample ID: "Orchard Hill Landfill"

Sample Type: aqueous

Date/Time Sampled: 12/07/94 4:25pm Sampled By: TM of KWRP Date Received: 12/08/94 Lab Sample No.: 943746-01

Parameter	Results	Units	Comments
PCB Aroclor 1016	<0.1	ug/L	
PCS Aroclor 1221	<0.1	ug/L	
PCB Aroclor 1232	<0.1	ug/L	
PCB Aroclor 1242	0.5	ug/L	
PCB Aroclor 1248	<0.1	ug/L	
PCB Aroclor 1254	<0.1	ug/L	
PCB Aroclor 1260	<0.1	ug/L	
PCB Aroclors, total	0.5	ug/L	

Unless otherwise noted, test results represent the sample(s) as they were received.

### KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666	$\bigvee$

### ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo, MI 49007

Attn: Mr. Tim Meulenberg

Proj. No.: 943778 Client No.: 0399 Date Activated: 12/12/94

Date Promised: 12/28/94
Date Reported: 12/22/94

PO#: 071565

Project Desc.: Analysis of an aqueous sample from Orchard Hills Landfill

KWRP #13314.

### Dear Client:

Attached you will find test results for Project No. 943778. Please refer to this Project No. if you have any questions regarding our work. Unless noted otherwise all tests were performed within the maximum U.S. EPA allowable holding times.

Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger Director of Laboratories

hickarf / kug-

To: Kalamazoo Water Reclamation Plant Project No: 943778

Re: Analysis of an aqueous sample from Orchard Hills Landfill KWRP #13314.

Sample ID: "Orchard Hill Landfill, OHL34694"

Sample Type: aqueous

Date/Time Sampled: 12/12/94 7:45am
Sampled By: SMR of KWRP
Date Received: 12/12/94
Lab Sample No.: 943778-01

Parameter	Results	Units	Comments
PCB Aroclor 1016	<0.1	ug/L	
PCB Aroclor 1221	<0.1	ug/L	
PCB Aroclor 1232	<0.1	ug/L	
PCB Aroclor 1242	0.6	ug/L	
PCB Aroclor 1248	<0.1	ug/L	
PCB Aroclor 1254	<0.1	ug/L	
PCB Aroclor 1260	<0.1	ug/L	
PCB Aroclors, total	0.6	ug/L	

Unless otherwise noted, test results represent the sample(s) as they were received.

### KAR Laboratories, Inc.

4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666	

### ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo, MI 49007

Attn: Mr. Tim Meulenberg

Proj. No.: 943845 Client No.:

0399 Date Activated: 12/15/94 Date Promised: 12/30/94

Date Reported: 12/29/94

PO#: 071565

Project Desc.: Analysis of an aqueous sample from Orchard Hills Landfill KWRP #13326.

### Dear Client:

Attached you will find test results for Project No. 943845. Please refer to this Project No. if you have any questions regarding our work. Unless noted otherwise all tests were performed within the maximum U.S. EPA allowable holding times.

> Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger

huchael (

Director of Laboratories

To: Kalamazoo Water Reclamation Plant Project No: 943845

Re: Analysis of an aqueous sample from Orchard Hills Landfill KWRP #13326.

Sample ID: "Orchard Hills Landfill, Mun. Pumping Station"

Sample Type: aqueous

Date/Time Sampled: 12/15/94 11:30am

Sampled By: SMR of KWRP Date Received: 12/15/94
Lab Sample No.: 943845-01

Parameter	Results	Units	Comments
PCB Aroclor 1016	<0.1	ug/L	
PCB Aroclor 1221	<0.1	ug/L	
PCB Aroclor 1232	<0.1	ug/L	
PCB Aroclor 1242	0.5	ug/L	
PCB Aroclor 1248	<0.1	ug/L	
PCB Aroclor 1254	<0.1	ug/L	
PCB Aroclor 1260	<0.1	ug/L	
PCB Aroclors, total	0.5	ug/L	

Unless otherwise noted, test results represent the sample(s) as they were received.

### KALAMAZ O WATER RECLAMA ON PLANT

INDUSTRIAL USER SELF-MONITORING REPORT

Facility: Orchard Hill Landfill

3378 Hennesy Road Watervliet, MI 49098 Due: July 10, 1994

Jan 10, 1995

Reporting Period: January 1, 1994 - June 30, 1994

Sample Code:

Location:

Hauled waste prior to or during discharge at the Kalamazoo Water Reclamation Plant.

### Monitoring Requirements:

<u>Pollutants</u>	Daily Max.	Results/Units	Sample Type
	<u>mg/L</u>		
Cadmium, T	0.040	<0.01 mg/L	Grab
Chromium, T	4.67	O. Ole maje	Grab
Copper, T	2.23	0.28 mg/2	Grab
Lead, T	0.110	LO,004 m/L	Grab
Nickel, T	1.59	0.32 mg/L	Grab
Zinc, T	5.30	0.64 my/L	Grab
Cyanide, T	0.250	0,03 mg/L	Grab
Petroleum Hydrocarbon	100	2 mg/L	Grab
pН	6.2-9.8 S.U.	9.0 SU	Grab
Mercury, T	prohibited	LO.001 Mg/L	Grab
PCBs, T	prohibited	Annual Artack	
TCLP		Annual Attached	Grab
MDNR Scans 1 & 2		Attached	Grab

N/R indicates "Not Required" PLEASE ATTACH COPIES OF LABORATORY RESULTS

Flow Information: 1/86 yal Average Daily 24900gal Maximum Daily

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

<u>/-6 - 95</u> Date

Jerry Miller Ralph O Balkemn



### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennessey Road Watervliet, MI 49098

Attn: Mr. Ralph Balkema

Dibromochloromethane

Project No.: 943754 Client No.: 2336 Project Date:
Date Promised:
Date Reported: 12/08/94 12/22/94

12/22/94

PO#:

Project Desc.: Leachate analysis for IPP Monitoring.

Sample No.:943754-01 Type:aqueous Rec'd:12/08/94 Sampled:12/08/94 2:50pm By:Client ID: "Leachate" Solids, fixed 3.65 mg/LSolids, total 3.86 mg/L Solids, volatile 0.21 mg/L Cadmium, total <0.01 mg/L Elevated detection limit due to sample matrix interference. Chromium, total 0.06 mg/L Copper, total 0.28 mq/L Lead, total < 0.004 mg/LElevated detection limit due to sample matrix interference. Mercury, total < 0.001 mg/LElevated detection limit due to sample matrix interference. Nickel, total 0.32 mg/LZinc, total 0.64 mg/L TCLP report See attached Cyanide, total 0.03 mg/LPH 9.0 S.U. MDNR Scan 1 & 2 See below <1 ug/L 1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane <1 ug/L 1,1,2-Trichloroethane <1 ug/L1,1-Dichloroethane 1.5 ug/L 1,1-Dichloroethene <1 ug/L1,2-Dichloroethane 5.1 ug/L 1,2-Dichloropropane <1 ug/L Benzene 6.1 uq/L Bromodichloromethane <1 ug/LBromoform <1 ug/L Bromomethane <1 ug/L Carbon tetrachloride <1 ug/L Chlorobenzene 1.6 ug/L Chloroethane <1 ug/L Chloroform <1 ug/L Chloromethane <1 ug/LCis-1,2-Dichloroethene 5.8 ug/L Cis-1,3-Dichloropropene <1 ug/L

<1 ug/L



Attn: Mr. Ralph Balkema

### ANALYTICAL REPORT

To: Orchard Hills Landfill Project No.: 943754 Client No.:

3290 Hennessey Road 2336 Date Promised: Watervliet, MI 49098 12/08/94 12/22/94

Date Reported: 12/22/94

Project Desc.: Leachate analysis for IPP Monitoring.

Ethylbenzene	43 ug/L
M-and/or p-xylene	100 ug/L
Methylene chloride	18 ug/L
0-Xylene	39 ug/L
Tetrachloroethene	<1 ug/L
Toluene	110 ug/L
Trans-1,2-Dichloroethene	<1 ug/L
Trans-1,3-Dichloropropene	<1 ug/L
Trichloroethene	1.1 ug/L
Trichlorofluoromethane	<1 ug/L
Vinyl chloride	4.3 ug/L
PCB Aroclor 1016	<0.1 ug/L
PCB Aroclor 1221	<0.1 ug/L
PCB Aroclor 1232	<0.1 ug/L
PCB Aroclor 1242	0.5 ug/L
PCB Aroclor 1248	<0.1 ug/L
PCB Aroclor 1254	<0.1 ug/L
PCB Aroclor 1260	<0.1 ug/L
PCB Aroclors, total	0.5 ug/L

Unless otherwise noted, test results represent the sample(s) as they were received.



# TOXICITY CHARACTERISTIC LEACHING PROCEDURE EVALUATION OF

One Landfill Leachate Sample

FOR

Orchard Hills Landfill

KAR Project No.: 943754

December 22, 1994

Performed by:

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



KAR PROJECT NO.: 943754

### INTRODUCTION

On December 8, 1994 one landfill leachate sample was submitted by Mr. Ralph Balkema for TCLP evaluation and analysis. The sample was received in containers labelled "Leachate." The Toxicity Characteristic Leaching Procedure (TCLP) was performed, followed by extract analysis for the requested constituents. The following tables of this report display the extraction data and analytical results.

### **METHODS**

"Appendix I - Toxicity Characteristic Leaching Procedure" (40 CFR 268) was the method employed for the extraction. Subsequent analysis of the extract were performed according to "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," SW-846, 2nd edition, U.S. EPA.

### SUMMARY OF PROCEDURE

A waste sample is first subjected to some preliminary tests. These may include selection of the appropriate extraction fluid, a solids determination, and whether or not particle size reduction will be needed. A 100.0 gram representative subsample is then obtained, and any free liquids present are separated and stored for later analysis. The solid portion of the waste is combined with 20 times its weight of extraction fluid and rotated end-over-end for 18 ± 2 hours. The aqueous extract is then separated from the solids by filtration, combined with any free liquid separated earlier and analyzed for the requested parameters. The TCLP for volatile organic constituents is performed in the Zero Headspace Extractor (ZHE), a device which minimizes the loss of volatile organic compounds during agitation and filtration.

KAP Laboratories, Inc.

### TABLE 1

### TCLP EXTRACTION DATA

KAR I.D. NO.: 943754-01

CLIENT I.D.: Leachate

SAMPLE DESCRIPTION: Brown liquid

### EXTRACTION DATA

	For Non-volatiles	For volatiles
extraction fluid used:	NA*	NA*
particle size reduction:	Not Required	Not Required
sample weight:	140.9 g	140.9 g
weight of filtered liquid:	138.0 g	138.0 g
weight of solid extracted:	136 g	136 g
volume of extraction fluid:	NA*	NA*
final pH:	9.0 s.u. '	

<sup>\*</sup>Extract was generated by filtration only, according to method.



### TABLE 2

# COMPARISON OF ANALYTICAL RESULTS WITH TOXICITY CHARACTERISTIC REGULATORY LIMITS\*

KAR I.D. NO.: 943754-01

CLIENT I.D.: Leachate

### (Concentrations are expressed as mg/L)

Parameter	TCLP Extract Concentration	Regulatory Limit*
Arsenic	<0.1	5.0
Barium	0.44	100.0
Benzene	0.005	0.5
Cadmium	<0.005	1.0
Carbon tetrachloride	<0.001	0.5
Chlordane	<0.03	0.03
Chlorobenzene	0.001	100.0
Chloroform	<0.001	6.0
Chromium	0.09	5.0
Copper	<0.03	100.0
Cresols	9.9	200.0
2,4-D	0.03	10.0
1,4-Dichlorobenzene	0.011	7.5
1,2-Dichloroethane	0.006	0.5
1,1-Dichloroethylene	<0.001	0.7
2,4-Dinitrotoluene	<0.01	0.13
Endrin	<0.01	0.02
Heptachlor (and its epoxide)	<0.008	0.008
Hexachlorobenzene	<0.01	0.13
Hexachlorobutadiene	<0.01	0.5
Hexachloroethane	<0.01	3.0



### TABLE 2

KAR I.D. NO.: 943754-01 CLIENT I.D.: Leachate

<u>Parameter</u>	Concentration	ı		<u>Limit*</u>
Lead	<0.05			5.0
Lindane	<0.01			0.4
Mercury	<0.001			0.2
Methoxychlor	<0.01			10.0
Methyl ethyl ketone	4.5			200.0
Nitrobenzene	<0.01			2.0
Pentachlorophenol	<0.01			100.0
Pyridine	<0.01			5.0
Selenium	<0.1			1.0
Silver	<0.005			5.0
Tetrachloroethylene	<0.001			0.7
Toxaphene	<0.5			0.5
Trichloroethylene	<0.001			0.5
2,4,5-Trichlorophenol	<0.01			400.0
2,4,6-Trichlorophenol	<0.01			2.0
2,4,5-TP	0.01			1.0
Vinyl chloride	0.001	- *	• •	0.2
Zinc	<0.30		` )	500.0

### CONCLUSION

This material does not exhibit the Toxicity Characteristic.

<sup>\*</sup>Established by U.S. EPA and/or Michigan DNR

<sup>&</sup>quot;---" indicates not analyzed "<" indicates not detected at the stated detection limit

KAR Laboratories, Inc.

1/03/95

### ANALYTICAL RESULTS

Page 1

Project No: 943954

To: Orchard Hills Landfill

Re: Analysis of one aqueous sample.

Sample ID:

"Leachate tank"

Sample Type:

aqueous

Date/Time Sampled: 12/27/94 10:00

Sampled By:

Client

2

Date Received:

12/27/94

Lab Sample No.: 943954-01

Parameter

Results Units

Comments

TPH (Gravimetric Method)

mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

### ORCHARD HILL LANDFILL

Sample Location ID:

OHL

Current Quarter Compliance Status:
(As of the date of print found in lower right corner.)

Compliance Status:

Quarter #1: Quarter #2: Quarter #3:

Quarter #4:

1993 OK OK OK OK

1994 OK OK OK OK

1995 OK OK OK OK

Daily	40	4670	2230	110	1590	0	5300	250	6.2	100
TRĆ	48	5604	2676	132	1908	0	6360	300	9.8	140
(Units)	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	µg/L	S.U.	mg/L

Date	Cadmium	Chromium	Copper	Lead	Nickel	Mercury	Zinc	Cyanide	рН	Oil & Grease
01/08/91	<del></del>	80	60	10	430	0	840	30		, ,
04/03/91	0.5	45	48	24	498	0	670		8.6	11
04/05/91	0	60 .   .	40	4	280	0	690	20		
04/22/91	0	70	40	11	460	0	980	90		
07/17/91	0	90	180	58	520	3.1	2320	0		
10/09/91	48.7 + +	86	121	372 + +	389	3.1	572	• •	8.3	239 + +
11/07/91	0	60	80	7	<u> </u>	0	690	0		
11/25/91	0	40	120	18	210	0	420	70	8.4	
01/06/92	0	50 <i></i>	0	5. <i>.</i>	260	0	730	30 .   .		
03/12/92	8.7	82	50	20	175	0	153	97.4	8.1	
03/16/92	0	50	10	5	280	0	440			
03/31/92							, ,	40		2
05/13/92	6	60	80	7	340	0	620	20	8.2	
_ 01/14/93	0	70	340	15	250	0	1060	0	8.6	
02/03/93	0.4	58.9	204	13.7	896	0 _	2242	160	8.3	136
02/15/93					··			140		
06/15/93	_ 0	150	200	18	520 .	0	2730	20	8	
12/08/93	0	0	0	87	0	0	1800	0	8.3	
03/14/94	0	63.1	0	14.5	288.4	0	1005	90	8.6	
06/21/94	0	90	300	0	_ 380	0	1020	20	8.5	2
12/08/94	0	60	_280	0	320	0	640	30	9	2

## 1994 Data Summary and Compliance Status ORCHARD HILL LANDFILL

			1994 Dala	ORCHARD HILL LAND	OFILL						Quarterly Compliance
	Cadmium	Chromium	Copper	Lead	Nickel	Mercury	Zinc	Cyanide	рН	G/O	Status
of samples in st Quarter 0/1 - 3/31}	2	2	2	2	2	2	2	2		0	OK
daily violation TRC violation	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%		0% 0%	Status Manually Adjusted Reason for adjustment
of Compliant mples required											Adjusted Status
f samples in cond Quarter 1 - 6/30)	2	2	2	2	2	2	2	2		1	OK ]
daily violation TRC violation	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%		0% 0%	Status Manually Adjusted Reason for adjustment
of Compliant amples required											Adjusted Status
of samples in hird Quarter /1 - 9/30)	1	1	1	1	1	1	1	1		1	OK_
daily violation TRC violation	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%		0% 0%	Status Manually Adjusted Reason for adjustment
of Compliant mples required	····						·····				Adjusted Status
of samples in urth quarter 1 - 12/31)	1	1	1	1	1	1	1	1	1	1	OK
daily violation TRC violation	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%	0% 0%		0% 0%	Status Manually Adjusted Reason for adjustment
of Compliant imples required						·					Adjusted Status
Date of Violation	Violetion	KWRP Action	Date of Action	Requirements		Due	Received	Comments	···		

## 1995 Data Summary and Compliance Status ORCHARD HILL LANDFILL

FORMETANIEL TREET

Compliance G/O Cadmium Chromium Copper Lead Nickel Mercury Zinc Cyanide Status # of samples in First Quarter 1 OK 1 1 1 1 1 1 1 1 (10/1 - 3/31) % daily violation 0% 0% 0% 0% 0% 0% 0% 0% 0% Status Manually Adjusted: 0% % TRC violation 0% 0% 0% 0% 0% 0% 0% 0% Reason for adjustment: # of Compliant samples required: Adjusted Status: # of samples in Second Quarter 0 0 0 0 0 0 0 0 0 OK (1/1 - 6/30) % daily violation 0% 0% 0% 0% 0% 0% 0% 0% 0% Status Manually Adjusted: % TRC violation 0% 0% 0% 0% 0% 0% 0% 0% 0% Reason for adjustment: # of Compliant samples required: Adjusted Status: # of samples in Third Quarter 0 0 0 0 OK 0 0 0 0 0 (4/1 - 9/30) % daily violation 0% 0% 0% 0% 0% 0% 0% Status Manually Adjusted: 0% 0% Reason for adjustment: % TRC violation 0% 0% 0% 0% 0% 0% 0% 0% 0% # of Compliant samples required: Adjusted Status: # of samples in 0 0 OK Fourth guarter: 0 0 0 0 0 0 0 (7/1 - 12/31) 0% 0% 0% 0% Status Manually Adjusted. % daily violation 0% 0% 0% 0% 0% % TRC violation 0% 0% 0% 0% 0% 0% Reason for adjustment: 0% 0% 0% # of Compliant samples required. Adjusted Status:

Date of	Violation	Violation	Action	Action	Requirements	Kaceivad	Comments	 		
									,	

Described Comments

Quarterly

# KALAM/ OO WATER RECLAMATIC PLANT INDUSTRIAL USER SELF-MONITORING REPORT

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	7	iad
L.,	_2	

(I) Facility:	3378 Hennes	y Road		(2) Due Date: January 10, 1994				
	Watervliet, M	1 49098			(3) Sample Poi	int Code: OH	Ļ	
(4) Location:	Septage Haule Pump Station		on at the City o	f Kalamazoo Wa	ater Reclamation	Plant west o	f the Raw Sewa	
(5) Purpose fo	or Sampling:	☐ Violation R	esampling	eriod: <u>July 1, 1</u>	993 - December	31, 1994		
(6) Sampling	Method:	graß	~***********	******************		naunanun juga ja kangan dan dan 1986 da da		
					End:			
(8) Date and	Time of Grab S	amples: 12/	168/93	1,.	20 PM			
(9)			RES	SULTS				
Parameter	<u>Value</u>	<u>Units</u>	Sample Type*	Parameter	Value	Units	Sample Type*	
Cadmium, T	20.02	m9/1		Mercury, T	10.0005	114/2	S.	
Chromium, T	20.2	mg/L	<u></u>	Cyanide, T	20,02	mg/L	<u>J</u>	
Copper, T	2014	mg/L	<i>W</i>	рH	8.3	5,0.	$\mathcal{L}$	
Lead, T	0.087	My/k		MDNR Scans	1 & 2 (Attach R	esults)		
	60.4		<u> </u>	TCLP (Attach	Results)			
Zinc, T		My/L						
* Sample Type:	: G = Grab sampl	e C = Composite	Sample					
(10) Name of	Laboratory	KAN	LAB		(Attach	n copies of La	boratory Resu	
(11) Flow: A	verage Daily	20	00	M	aximum Daily	20,000	)	
(12) I certify un designed to who manag and belief, fine and im	nder penalty of law c assure that qualified ge the system, or the true, accurate, and oprisonment for kno	that this document fied personnel prope ose persons directly I complete. I am aw owing violations.	orly gather and eva responsible for gat vare that there are	luate the informatio hering the informati significant penalties	ider my direction or s in submitted. Based on, the information su for submitting false	on my inquiry of ibmitted is, to the information, incl	the person or person or person or person of my kno uding the possil	
Signature:	fore_	w Mal	Title:			Date: <u>284</u>	2ec 93 _	

Mail to:

INDUSTRIAL SERVICES RECORDS SPECIALIST
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

	_	
(616) 381-9666	$\overline{}$	

### ANALYTICAL REPORT

To: Orchard Hills Landfill

3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: Client No.:

933617

Date Activated:
Date Promised:

1208 12/08/93

Date Reported:

12/23/93 12/23/93

PO#:

Project Desc.: Leachate analysis for IPP Monitoring.

### Dear Client:

Attached you will find test results for Project No. 933617. Please refer to this Project No. if you have any questions regarding this work. Unless noted otherwise all tests were performed within the maximum U.S. EPA allowable holding times.

Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger

Director of Laboratories

### ANALYTICAL REPORT

To: Orchard Hills Landfill Project No.: 933617

3290 Hennesey Road Client No.: 1208
Watervliet, MI 49098 Project Date: 12/08/93
Date Promised: 12/23/93

Attn: Mr. Jerry Miller Date Reported: 12/23/93

PO#:

Project Desc.: Leachate analysis for IPP Monitoring.

Sample No.:933617-01 Type:aqueous Rec'd:12/08/93

Sampled:12/08/93 13:20 By:JM of OHL

ID: "Treated Leachate"

Cadmium, total <0.02 mg/L

Elevated detection limit due to sample matrix interference.

Chromium, total <0.2 mg/L

Elevated detection limit due to sample matrix interference.

Copper, total <0.4 mg/L

Elevated detection limit due to sample matrix interference.

Lead, total 0.087 mg/L
Mercury, total <0.0005 mg/L

Nickel, total <0.4 mg/L

Elevated detection limit due to sample matrix interference.

Zinc, total 1.8 mg/L Cyanide, total <0.02 mg/L PH 8.3 S.U.

MDNR Scan 1 & 2 See attached

Elevated detection limit due to sample matrix interference.

Sample No.:933617-02 Type:aqueous Rec'd:12/09/93

Sampled:12/09/93 2:30 By:JM of OHL

ID: "Treated Leachate"

TCLP report See attached

Unless otherwise noted, test results represent the sample(s) as they were received.

### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 933617 Report Date: 12/23/93 To: Orchard Hills Landfill

Proj. Desc.:Leachate analysis for IPP Monitoring.

Sample No.:933617-01 Type:aqueous Rec'd:12/08/93

Sampled:12/08/93 13:20 By:JM of OHL

Sample ID: "Treated Leachate"

### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	<50	trans-1,2-Dichloroethene	<50
Bromoform	<50	1,2-Dichloropropane	<50
Bromomethane	<50	cis-1,3-Dichloropropene	<50
Carbon tetrachloride	<50	trans-1,3-Dichloropropene	<50
Chlorobenzene	<50	Methylene chloride	<50
Chloroethane	<50	1,1,2,2-Tetrachloroethane	<50
Chloroform	<50	Tetrachloroethene	<50
Chloromethane	<50	1,1,1-Trichloroethane	<50
Dibromochloromethane	<50	1,1,2-Trichloroethane	<50
1,1-Dichloroethane	<50	Trichloroethene	<50
1,2-Dichloroethane	<50	Trichlorofluoromethane	<50
1,1-Dichloroethene	<50	Vinyl chloride	<50
cis-1,2-Dichloroethene	<50	-	

### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	<50	m-and/or p-Xylene	<50
Ethyl benzene	<50	o-Xylene	<50
Toluene	100	-	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

< (less than) indicates NOT DETECTED, followed by the limit of detection.

EPA Method 8260

# TOXICITY CHARACTERISTIC LEACHING PROCEDURE EVALUATION OF

A Treated Leachate Sample

FOR

Orchard Hills Landfill

KAR Project No.: 933617

December 23, 1993

Performed by:

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

KAR PROJECT NO.: 933617

### INTRODUCTION

On December 8, 1993 one leachate sample was submitted by Mr. Jerry Miller for TCLP evaluation and analysis. The sample was received in containers labelled "Treated Leachate." The Toxicity Characteristic Leaching Procedure (TCLP) was performed, followed by extract analysis for the requested constituents. The following tables of this report display the extraction data and analytical results.

### METHODS

"Appendix I - Toxicity Characteristic Leaching Procedure" (40 CFR 268) was the method employed for the extraction. Subsequent analysis of the extract were performed according to "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods," SW-846, 2nd edition, U.S. EPA.

### SUMMARY OF PROCEDURE

A waste sample is first subjected to some preliminary tests. These may include selection of the appropriate extraction fluid, a solids determination, and whether or not particle size reduction will be needed. A 100.0 gram representative subsample is then obtained, and any free liquids present are separated and stored for later analysis. The solid portion of the waste is combined with 20 times its weight of extraction fluid and rotated end-over-end for 18 ± 2 hours. The aqueous extract is then separated from the solids by filtration, combined with any free liquid separated earlier and analyzed for the requested parameters. The TCLP for volatile organic constituents is performed in the Zero Headspace Extractor (ZHE), a device which minimizes the loss of volatile organic compounds during agitation and filtration.

### TABLE 1

### TCLP EXTRACTION DATA

KAR I.D. NO.: 933617-02

CLIENT I.D.: Treated Leachate

SAMPLE DESCRIPTION: Greyish brown liquid.

### SOLIDS DETERMINATION

Total solids: 38,700 mg/L

Volatile solids: 4,400 mg/L

Fixed solids: 34,300 mg/L

### EXTRACTION DATA

	For Non-volatiles	For volatiles
extraction fluid used:	NA*	
particle size reduction:	NA*	
sample weight:	NA*	
weight of filtered liquid:	NA*	
weight of solid extracted:	NA*	
volume of extraction fluid:	NA*	

final pH: 8.3 s.u.

<sup>\*</sup>Extract was generated by filtration only, according to method.

### TABLE 2

# COMPARISON OF ANALYTICAL RESULTS WITH TOXICITY CHARACTERISTIC REGULATORY LIMITS\*

KAR I.D. NO.: 933617-02

CLIENT I.D.: Treated Leachate

### (Concentrations are expressed as mg/L)

<u>PARAMETERS</u>	TCLP EXTRACT CONCENTRATION	REGULATORY LIMIT*
Arsenic	<1	5.0
Barium	<0.5	100.0
Benzene	<0.020	0.5
Cadmium	<0.05	1.0
Carbon tetrachloride	<0.020	0.5
Chlordane	<0.03	0.03
Chlorobenzene	<0.020	100.0
Chloroform	<0.020	6.0
Chromium	<0.1	5.0
Copper	<0.1	100.0
Cresols	0.05	200.0
2,4-D	<0.02	10.0
1,4-Dichlorobenzene	<0.020	7.5
1,2-Dichloroethane	<0.020	0.5
1,1-Dichloroethylene	<0.020	0.7
2,4-Dinitrotoluene	<0.01	0.13
Endrin	<0.01	0.02
Heptachlor (and its epoxide)	<0.008	0.008
Hexachlorobenzene	<0.01	0.13
Hexachlorobutadiene	<0.01	0.5
Hexachloroethane	<0.01	3.0

TABLE 2

KAR I.D. NO.: 933617-02

CLIENT I.D. : Treated Leachate

PARAMETERS	CONCENTRATION	<u>LIMIT*</u>
Lead	<0.5	5.0
Lindane	<0.01	0.4
Mercury	<0.0005	0.2
Methoxychlor	<0.01	10.0
Methyl ethyl ketone	2.2	200.0
Nitrobenzene	<0.01	2.0
Pentachlorophenol	<0.01	100.0
Pyridine	<0.01	5.0
Selenium	<1	1.0
Silver	<0.05	5.0
Tetrachloroethylene	<0.020	0.7
Toxaphene	<0.50	0.5
Trichloroethylene	<0.020	0.5
2,4,5-Trichlorophenol	<0.01	400.0
2,4,6-Trichlorophenol	<0.01	2.0
2,4,5-TP	<0.02	1.0
Vinyl chloride	<0.020	0.2
Zinc	0.4	500.0

### CONCLUSION

This material does not exhibit the Toxicity Characteristic with respect to the above constituents.

<sup>\*</sup>Established by the U.S. EPA and/or Michigan DNR

<sup>---</sup>indicates not analyzed

<sup>&</sup>quot;<"indicates not detected at the stated detection limit

### JOO WATER RECLAMATI | ] PLANT KALAM

INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility: Orchard Hill Landfill (2) Due Date: July 10, 1993 3378 Hennesy Road (3) Sample Point Code: OHL Watervliet, MI 49098 (4) Location: Septage Haulers Dump Station at the City of Kalamazoo Water Reclamation Plant west of the Raw Sewage Pump Station. ✓ Routine periodic report. Period: January 1, 1993 - June 30, 1993 (5) Purpose for Sampling: □ Violation Resampling □ Other: (6) Sampling Method: (7) Date and Time of Composite Samples: Start: End: (8) Date and Time of Grab Samples: 6/15/93 1.00 Pm RESULTS (9) <u>Parameter</u> Value Units Sample Type\* Parameter Value Units Sample Type\* Cadmium, T Mercury, T Chromium, T Cyanide, T Copper, T Lead, T MDNR Scans 1 & 2 (Attach Results) Nickel, T TCLP (Attach Results) Zinc, T \* Sample Type: G = Grab sample C = Composite Sample (10) Name of Laboratory KAr LABS (Attach copies of Laboratory Results) Maximum Daily 20,000 (11) Flow: Average Daily (12) I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of

Mail to:

Signature:

fine and imprisonment for knowing violations.

INDUSTRIAL SERVICES RECORDS SPECIALIST Kalamazoo Water Reclamation Plant 1415 N. Harrison Kalamazoo, MI 49007-2565

// Title:\_\_\_\_\_\_ Date: 7/1/93

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666	

### ANALYTICAL REPORT

To: Orchard Hills Landfill

3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 931406 Client No.: 1208 Date Activated: 6/15/93 Date Promised: 6/29/93

Date Reported: 6/29/93

PO#:

Project Desc.: Analysis of one aqueous sample for IPP Monitoring.

### Dear Client:

Attached you will find test results for Project No. 931406. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger

Director of Laboratories

### ANALYTICAL REPORT

To: Orchard Hills Landfill Project No.: 931406
3290 Hennesey Road Client No.: 1208
Watervliet, MI 49098 Project Date: 6/15/93
Date Promised: 6/29/93
Attn: Mr. Jerry Miller Date Reported: 6/29/93

PO#:

Project Desc.: Analysis of one aqueous sample for IPP Monitoring.

Sample No.:931406-01 Type:aqueous Rec'd: 6/15/93

Sampled: 6/15/93 1:00pm By:JM of Orchard Hills

ID: "Treated Leachate"

Cadmium, total < 0.005 mg/LChromium, total 0.15 mg/LCopper, total 0.20 mg/L Lead, total 0.018 mg/L <0.0005 mg/L Mercury, total Nickel, total 0.52 mg/LZinc, total 2.73 mg/LCyanide, total 0.02 mg/L

Sample matrix difficulty encountered-result is approximate.

PH 8.0 S.U.

TCLP report See attached MDNR Scan 1 & 2 See attached

High detection limit due to high conc. of non-target compds.

Unless otherwise noted, test results represent the sample(s) as they were received.

### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill Project No.: 931406
Report Date: 6/29/93

Proj. Desc.: Analysis of one aqueous sample for IPP Monitoring.

Sample No.:931406-01 Type:aqueous Rec'd: 6/15/93

Sampled: 6/15/93 1:00pm By:JM of Orchard Hills

Sample ID: "Treated Leachate"

### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	<5	trans-1,2-Dichloroethene	<5
Bromoform	<5	1,2-Dichloropropane	<5
Bromomethane	<5	cis-1,3-Dichloropropene	<5
Carbon tetrachloride	<5	trans-1,3-Dichloropropene	<5
Chlorobenzene	<5	Methylene chloride	41
Chloroethane	<5	1,1,2,2-Tetrachloroethane	<5
Chloroform	<5	Tetrachloroethene	<5
Chloromethane	<5	1,1,1-Trichloroethane	<5
Dibromochloromethane	<5	1,1,2-Trichloroethane	<5
1,1-Dichloroethane	<5	Trichloroethene	<5
1,2-Dichloroethane	13	Trichlorofluoromethane	<b>&lt;</b> 5
1,1-Dichloroethene	<5	Vinyl chloride	<b>&lt;</b> 5
cis-1,2-Dichloroethene	<5	<del>-</del>	

### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	<5	m-and/or p-Xylene	51
Ethyl benzene	39	o-Xylene	20
Toluene	160	-	

Concentrations are expressed as ug/L.

USEPA Method 8260

<sup>---</sup> indicated not analyzed.

<sup>&</sup>lt; (less than) indicates NOT DETECTED, followed by the limit of detection.

# TOXICITY CHARACTERISTIC LEACHING PROCEDURE EVALUATION OF

Aqueous IPP Monitoring Sample

FOR

Orchard Hills Landfill

KAR Project No.: 931406

June 29, 1993

Performed by:

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002 KAR PROJECT NO.: 931406

### INTRODUCTION

On June 15, 1993 one aqueous IPP Monitoring sample was submitted by Mr. Jerry Miller for TCLP evaluation and analysis. The sample was received in containers labelled "Treated Leachate." The Toxicity Characteristic Leaching Procedure (TCLP) was performed, followed by extract analysis for the requested constituents. The following tables of this report display the extraction data and analytical results.

### METHODS

"Appendix I - Toxicity Characteristic Leaching Procedure" (40 CFR 268) was the method employed for the extraction. Subsequent analyses of the extract were performed according to "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods", SW-846, 2nd edition, U.S. EPA.

### SUMMARY OF PROCEDURE

A waste sample is first subjected to some preliminary tests. These may include selection of the appropriate extraction fluid, a solids determination, and whether or not particle size reduction will be needed. A 100.0 gram representative subsample is then obtained, and any free liquids present are separated and stored for later analysis. The solid portion of the waste is combined with 20 times its weight of extraction fluid and rotated end-over-end for  $18 \pm 2$  hours. The aqueous extract is then separated from the solids by filtration, combined with any free liquid separated earlier and anlayzed for the requested parameters. The TCLP for volatile organic constituents is performed in the Zero Headspace Extractor (ZHE), a device which minimizes the loss of volatile organic compounds during agitation and filtration.

#### TABLE 1

#### TCLP EXTRACTION DATA

KAR I.D. NO.: 931406-01

CLIENT I.D.: Treated Leachate

SAMPLE DESCRIPTION: Dark brown to black liquid

extraction fluid used :

#### SOLIDS DETERMINATION

Total solids : 36,100 mg/L Volatile solids : 11,200 mg/L

Fixed solids : 24,900 mg/L

#### EXTRACTION DATA

#1 particle size reduction : Not required Not required

> sample weight : 164.4 g NA\*

For Non-volatiles For Volatiles

NA\*

weight of filtered liquid : NA\* NA\* weight of solid extracted : ×AN NA\* volume of extraction fluid : NA\* NA\*

final pH : 8.1 s.u.

<sup>\*</sup>Extract was generated by filtration only, according to method.

#### TABLE 2

# COMPARISON OF ANALYTICAL RESULTS WITH TOXICITY CHARACTERISTIC REGULATORY LIMITS\*

KAR I.D. NO.: 931406-01

CLIENT I.D.: Treated Leachate

(Concentrations are expressed as mg/L)

<u>Parameter</u>	TCLP Extract Concentration	Regulatory _Limit*
Arsenic	<0.05	5.0
Barium	0.56	100.0
Benzene	<0.005	0.5
Cadmium	<0.005	1.0
Carbon tetrachloride	<0.005	0.5
Chlordane	<0.03	0.03
Chlorobenzene	<0.005	100.0
Chloroform	<0.005	6.0
Chromium	0.14	5.0
Copper	0.08	100.0
Cresols	0.08	200.0
2,4-D	<1	10.0
1,4-Dichlorobenzene	0.016	7.5
1,2-Dichloroethane	0.028	0.5
1,1-Dichloroethylene	<0.005	0.7
2,4-Dinitrotoluene	<0.01	0.13
Endrin	<0.01	0.02
<pre>Heptachlor   (and its epoxide)</pre>	<0.008	0.008
Hexachlorobenzene	<0.01	0.13
Hexachlorobutadiene	<0.01	0.5
Hexachloroethane	<0.01	3.0

TABLE 2

KAR I.D. NO.: 931406-01

CLIENT I.D.: Treated Leachate

<u>Parameter</u>	Concentration	<u>Limit*</u>
Lead	0.006	5.0
Lindane	<0.01	0.4
Mercury	<0.0005	0.2
Methoxychlor	<0.01	10.0
Methyl ethyl ketone	15	200.0
Nitrobenzene	<0.01	2.0
Pentachlorophenol	<1	100.0
Pyridine	0.1	5.0
Selenium	<0.025	1.0
Silver	<0.005	5.0
Tetrachloroethylene	<0.005	0.7
Toxaphene	<0.5	0.5
Trichloroethylene	<0.005	0.5
2,4,5-Trichlorophenol	<1	400.0
2,4,6-Trichlorophenol	<1	2.0
2,4,5-TP	<1	1.0
Vinyl chloride	<0.005	0.2
Zinc	1.08	500.0

#### CONCLUSION

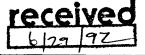
This material does not exhibit the Toxicity characteristic with respect to the constituents listed above.

<sup>\*</sup>Established by U.S. EPA and/or Michigan DNR

<sup>&</sup>quot;---" indicates not analyzed

<sup>&</sup>quot;<" indicates not detected at the stated detection limit

# KALA! .ZOO WATER RECLAMAT N PLANT INDUSTRIAL USER SELF-MONITORING REPORT



(2) Due Date: July 10, 1992

·	3378 Hennes Watervliet, M	•			(3) Sample Poi	nt Code: OHI	L
(4) Location:	Septage Haule Pump Station.		on at the City o	f Kalamazoo Wa	ater Reclamation	Plant west of	the Raw Sewage
(5) Purpose fo	, -	<ul><li>☐ Violation F</li><li>☐ Other:</li></ul>	Resampling		1, 1992 - June 3		
(6) Sampling I	Method:	BrAB.	SAIN P. 1	e Port	ON OUT	901Ng.	TANK
	Time of Compo		, .		-		
(8) Date and	Time of Grab S	amples: 5/	13/9.2	11-00	<u>Am</u>		
(9)			RES	SULTS			
<u>Parameter</u>	Value	<u>Units</u>	Sample Type*	<u>Parameter</u>	Value	<u>Units</u>	Sample Type*
Cadmium, T	0,006	mg/L	<u></u> <u></u>	Mercury, T	LO,0005	M4/L	<u> </u>
Chromium, T	0.06	mg/L	<u></u>	Cyanide, T	0.02	_Mg/L	1
Copper, T	0.08	Mg/L	<u> Ll</u>	рН	8,2	5 C	Sunt
₋ead, T	0.007	my/L	<u></u>	MDNR Scans	1 & 2 (Attach R	esults)	
Nickel, T	0.34	my/L	<u> </u>	TCLP (Attach	Results)		
Zinc, T	0.62	mg/L	1	РСВ, Т	<u> </u>	Vg/i	GIAB
* Sample Type:	: G = Grab sample	C = Composite	Sample				/
(10) Name of	Laboratory	KAL	LA BOVA	tories	(Attach	copies of Lal	poratory Results)
(11) Flow: A	verage Daily	800	0	M	aximum Daily	24,000	
designed to who manag and belief, fine and im	o assure that qualif ge the system, or th true, accurate, and prisonment for kno	ied personnel propose persons directly complete. I am aversimp violations.	t and all attachment erly gather and eva y responsible for gat ware that there are	ts were prepared un luate the informatio thering the informati	n submitted. Based on, the information su	on my inquiry of ibmitted is, to the	ordance with a system the person or persons best of my knowledge uding the possibility of
Signature:	ferone 1	J'IMCL	C Title:			Date: 6/.	25/92 -

Mail to:

(1) Facility:

Orchard Hill Landfill

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED

JUN 4 1992

ORCHARD HILL
LANDFILL

Proj. No.: 921088
Client No.: 1208
Date Activated: 5/13/92
Date Promised: 6/03/92
Date Reported: 6/03/92
PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 921088. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Project No.: 921088 Client No.: 1208 Project Date: 5/13/92 Date Promised: 6/03/92

Date Reported: 6/03/92

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.:921088-01 Type:aqueous Rec'd: 5/13/92 Sampled: 5/13/92

ID: "Leachate, 11:00"

Cadmium, total Chromium, total Copper, total Lead, total Mercury, total Nickel, total Zinc, total Cyanide, total PHTCLP report MDNR Scan 1 & 2

PCB, total

0.006 mg/L 0.06 mg/L 0.08 mg/L 0.007 mg/L < 0.0005 mg/L0.34 mg/L 0.62 mg/L 0.02 mg/L 8.2 S.U.

See attached See attached

<0.1 ug/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 921088 Report Date: 6/03/92 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one leachate sample.

Sample No.:921088-01 Type:aqueous Rec'd: 5/13/92 Sampled: 5/13/92

Sample ID: "Leachate, 11:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	<1	trans-1,2-Dichloroethene	< 7
Bromoform	<1	1,2-Dichloropropane	<1
Bromomethane	<1	cis-1,3-Dichloropropene	<1
Carbon tetrachloride	<1	trans-1,3-Dichloropropene	<1
Chlorobenzene	3.0	Methylene chloride	41
Chloroethane	<1	1,1,2,2-Tetrachloroethane	1.4
Chloroform	<1	Tetrachloroethene	<1
Chloromethane	<1	1,1,1-Trichloroethane	<1
Dibromochloromethane	<1	1,1,2-Trichloroethane	<1
1,1-Dichloroethane	3.3	Trichloroethene	1.3
1,2-Dichloroethane	28	Trichlorofluoromethane	<1
1,1-Dichloroethene	<1	Vinyl chloride	2.2
cis-1.2-Dichloroethene	22	•	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	17	m-and/or p-Xylene	120
Ethyl benzene	66	o-Xylene	59
Toluene	270	_	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

< (less than) indicates NOT DETECTED, followed by the limit of detection.

U.S. EPA Method 8260.

RECEIVED

JUN 4 1992

ORCHARD HILL
LANDFILL

# TOXICITY CHARACTERISTIC LEACHING PROCEDURE EVALUATION OF

"Leachate, 5/13/92"

FOR

Orchard Hills Landfill

KAR Project No.: 921088

June 3, 1992

Performed by:

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

KAR PROJECT NO.: 921088

#### INTRODUCTION

On May 13, 1992 a leachate sample was submitted by Mr. Jerry Miller for TCLP evaluation and analysis. The sample was received in containers labelled "Leachate, 5/13/92, 11:00." The Toxicity Characteristic Leaching Procedure (TCLP) was performed, followed by extract analysis for the requested constituents. The following tables of this report display the extraction data and analytical results.

#### **METHODS**

"Appendix I - Toxicity Characteristic Leaching Procedure" (40 CFR 268) was the method employed for the extraction. Subsequent analyses of the extract were performed according to "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods", SW-846, 2nd edition, U.S. EPA.

#### SUMMARY OF PROCEDURE

A waste sample is first subjected to some preliminary tests. These may include selection of the appropriate extraction fluid, a solids determination, and whether or not particle size reduction will be needed. A 100.0 gram representative subsample is then obtained, and any free liquids present are separated and stored for later analysis. The solid portion of the waste is combined with 20 times its weight of extraction fluid and rotated end-over-end for  $18 \pm 2$  hours. The aqueous extract is then separated from the solids by filtration, combined with any free liquid separated earlier and anlayzed for the requested parameters. The TCLP for volatile organic constituents is performed in the Zero Headspace Extractor (ZHE), a device which minimizes the loss of volatile organic compounds during agitation and filtration.

#### TABLE 1

#### TCLP EXTRACTION DATA

KAR I.D. NO.: 921088-01

CLIENT I.D.: Leachate, 5/13/92, 11:00

SAMPLE DESCRIPTION: Orange-brown liquid

#### SOLIDS DETERMINATION

Total solids : 4.97 % by weight Volatile solids : 0.67 % by weight Fixed solids : 4.30 % by weight

## EXTRACTION DATA

For	Non-vola	atiles	For	Volatiles

extraction fluid used:

particle size reduction:

sample weight:

NA

weight of filtered liquid:

weight of solid extracted:

NA

volume of extraction fluid:

final pH:

8.4 s.u.

<sup>\*</sup>Extract was generated by filtration per method.

#### TABLE 2

# COMPARISON OF ANALYTICAL RESULTS WITH TOXICITY CHARACTERISTIC REGULATORY LIMITS\*

KAR I.D. NO.: 921088-01

CLIENT I.D.: Leachate, 5/13/92, 11:00

#### (Concentrations are expressed as mg/L)

<u>Parameter</u>	TCLP Extract Concentration	Regulatory <u>Limit*</u>
<sup>N</sup> 2,4−D	<0.02	10.0
2,4,5-TP	<0.02	1.0
Chlordane	<0.03	0.03
& Endrin	<0.01	0.5
Heptachlor (and its epoxide)	<0.008	0.008
× Lindane	<0.01	0.4
$^{^{0}}_{ extsf{N}}$ Methoxychlor	<0.01	10.0
$\gamma^{\alpha}$ Toxaphene	<0.5	0.5

#### CONCLUSION

This material does not exhibit the Toxicity characteristic with respect to the above pesticides.

<sup>\*</sup>Established by the U.S. EPA and/or Michigan DNR

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 930094 Report Date: 2/04/93

Project Desc.: Analysis of one leachate sample.

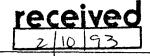
Sample No.:930094-01 Type:aqueous Rec'd: 1/14/93 Sampled: 1/14/93

ID: "Leachate Grab, 10:30am"

Cadmium, total <0.005 mg/L Chromium, total 0.07 mg/L Copper, total 0.34 mg/L Lead, total 0.015 mg/L Mercury, total <0.0005 mg/L Nickel, total 0.25 mg/L Zinc, total 1.06 mg/L Cyanide, total <0.02 mg/L PH8.6 S.U. MDNR Scal. 1 & 2 See attached PCS, total Identified and 0.11 ug/L quantified as Aroclor 1242.

Unless otherwise noted, test results represent the sample(s) as they were received.

# KALAMAZ J WATER RECLAMATION LANT INDUSTRIAL USER SELF-MONITORING REPORT



(2) Due Date: January 10, 1992

(1) Facility:	3378 Hennesy Road			(2) Due Date: January 10, 199 <b>3</b>			
	Watervliet, M	MI		(3) Sample Point Code: OHL			-
(4) Location:	Septage Haul Pump Station		on at the City of	Kalamazoo Wa	ter Reclamation	Plant west of	the Raw Sewage
(5) Purpose fo	or Sampling:	☐ Violation I	•	-	199 <mark>1 - Decembe</mark> r	31, 199 <b>D</b>	
(6) Sampling	Method:	7	1-11B			.—	
(7) Date and	Time of Compo	osite Samples:	Start:		End:		
(8) Date and	Time of Grab S	amples:	1/14/9	3 10	130 AM		
(9)			RES	SULTS			
Parameter	<u>Value</u>	<u>Units</u>	Sample Type*	<u>Parameter</u>	Value	Units	Sample Type*
Cadmíum, T	10,005	mg/L	9,-AB	Mercury, T	<u>L0.0005</u>	M9/2	AT
Chromium, T	0.07	mg/L		Cyanide, T	<u> </u>	<u> M9/L</u>	
Copper, T	0.34	my/c		рН	8,6	5.0	
Lead, T	0.015	my/L		РСВ, Т	0,11	09/1	Manhama and a superior
Nickel, T	0,25	M9/L			***		
Zinc, T	1.06	mg/L					
* Sample Type	: G = Grab sampl	e C = Composit	e Sample				
(10) Name of	Laboratory	KAr .	LABS	·····	(Attach	n copies of La	boratory Results)
(11) Flow: A	verage Daily	800	20	M	aximum Daily	Z5000	)
designed t who mana and belief, fine and in	o assure that quali ge the system, or th	fied personnel prop nose persons direct d complete. I am a owing violations	perly gather and evally responsible for gains ware that there are	luate the informatio thering the information significant penalties	n submitted. Based on, the information si	on my inquiry of ubmitted is, to the information, incli	ordance with a system the person or persons best of my knowledge uding the possibility of
./	/						

Mail to:



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

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· c		J	}
į C	)F.;;	r ILL	ì

Proj. No.: 930094 Client No.: 1208 Date Activated: 1/14/93 Date Promised: 2/04/93 Date Reported: 2/04/93 PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 930094. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

Michael J. Jaeger

Director of Laboratories

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 930094
Report Date: 2/04/93

Project Desc.: Analysis of one leachate sample.

Sample No.:930094-01 Type:aqueous Rec'd: 1/14/93 Sampled: 1/14/93

ID: "Leachate Grab, 10:30am"

Cadmium, total < 0.005 mg/LChromium, total 0.07 mg/LCopper, total 0.34 mg/L0.015 mg/L Lead, total Mercury, total <0.0005 mg/L Nickel, total 0.25 mg/LZinc, total 1.06 mg/L Cyanide, total < 0.02 mg/LPH8.6 S.U. MDNR Scan 1 & 2 See attached PCB, total Identified and 0.11 ug/L quantified as Aroclor 1242.

Unless otherwise noted, test results represent the sample(s) as they were received.

## PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 930094 Report Date: 2/04/93 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one leachate sample.

Sample No.:930094-01 Type:aqueous Rec'd: 1/14/93 Sampled: 1/14/93

Sample ID: "Leachate Grab, 10:30am"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	<1	trans-1,2-Dichloroethene	1.1
Bromoform	<1	1,2-Dichloropropane	<1
Bromomethane	<1	cis-1,3-Dichloropropene	<1
Carbon tetrachloride	<1	trans-1,3-Dichloropropene	<1
Chlorobenzene	4.5	Methylene chloride	35
Chloroethane	<1	1,1,2,2-Tetrachloroethane	<1
Chloroform	<1	Tetrachloroethene	<1
Chloromethane	<1	1,1,1-Trichloroethane	<1
Dibromochloromethane	<1	1,1,2-Trichloroethane	<1
1,1-Dichloroethane	3.7	Trichloroethene	1.8
1,2-Dichloroethane	19	${\it Trichlorofluoromethane}$	<1
1,1-Dichloroethene	<1	Vinyl chloride	14
cis-1,2-Dichloroethene	14		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	25	m-and/or p-Xylene	150
Ethyl benzene	66	o-Xylene	61
Toluene	270		

Concentrations are expressed as ug/L.

--- indicated not analyzed.

< (less than) indicates NOT DETECTED, followed by the limit of detection.

USEPA Method 8260

# ORCHARD HILL LANDFILL

Compliance S

s:

OK

Chronic	TRC
	,

Daily TRC (Units)

40	4670	2230	110	1590	0	5300	250	6.2	100
48	5604	2676	132	1908	0	6360	300	9.8	140
μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	μg/L	S.U.	mg/L

	Cadmium	Chromium	Copper	Lead	Nickel	Mercury	Zinc	Cyanide	рН	G/O
Date		· · · · · · · · · · · · · · · · · · ·				<del></del>	<del></del>	<u> </u>		
01/08/91	0	80	60	10	430	0	840	30		
04/03/91	0.5	45	48	24	498	0	670		8.6	11
04/05/91	0	60	40	4	280	0	690	20		
04/22/91	0	70	40	11	460	0	980	90		
07/17/91	0	90	180	58	520	3.1	2320	0		
10/09/91	48.7 ++	86	121	372 ++	389	3.1	572		8.3	238.
11/07/91	0	60	80	7		0	690	0		
11/25/91	0	40	120	18	210	0	420	70	8.4	
01/06/92	0	50	0	5	260	0	730	30		
03/12/92	8.7	82	50	20	175	0	153	97.4	8.1	
03/16/92	0	50	10	5	280	0	440			
03/31/92								40		2
05/13/92	6	60	80	7	340	0	620	20	8.2	
01/14/93	0	70	340	15	250	0	1060	0	8.6	

Last date sampled: 01/14/93

No. of samples

in last 6 mo:	1	1	1	1	1	1	1	1	1	0
% daily vio.	0%	0%	0%	0%	0%	0%	0%	0%		
% TRC vio.	0%	0%	0%	0%	0%	0%	0%	0%		

+ indicates Daily Violation

++ indicates TRC Violation

Self-Monitoring data

Note: If 66% or more of the samples exceed the daily limit stated above,

or if 33% or more of the samples exceed the TRC limit stated above,

the industry is in Significant Noncompliance with the City of Kalamazoo

Discharge Limitations

<sup>&</sup>quot;0" indicates results below detection limit

# VIOL ION SUMMARY - OHL

Returned to

Date	Action	Violation(s)	Requirements	Due	Received	d Complian	ce
1/10/93	ph. call	S.A. Reporting		1/10/93	2/10/93	2/10/93	(out)
1/2/92	ph. call	Hg	1 sample	2/2/92	•		
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						-	
		<del></del>				-	<del></del>
		1		1	ſ		

04/20/92 11:53 **5**616 's 7133

ORCHARD HILL - KAL. WASTE WATER 2003/003

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 920710

Report Date: 4/17/92

Project Desc.: Analysis of one leachate sample.

Sample No.:920710-01 Sample type: aqueous Received on: 3/31/92

ID: "Leachate, 3/31/92, 11:00"

Oil and grease

MBAS

2 mg/L 0.05 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

EPA Method 413,2 GHAV metric Procedure

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED

APR 20 1992

ORCHARD HILL LANDFILL Proj. No.: 920710
Client No.: 1208
Date Activated: 3/31/92
Date Promised: 4/21/92
Date Reported: 4/17/92
PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 920710. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb



# ORCHARD HILL SANITARY LANDFILL

3290 HENNESEY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

LAX COVER LETTER

			TIME
10	KAlAMAZOO.	Water Rela	in Tion
LOCATION	: Tim muchan	Berg	<del></del>
	337-8		
FAY NO	: 337-86	699	<del></del>
- ROM	: J-miller		
FAK NO	. (616) 463-/135		
IOIAL NU	MISER OF PAGES INCLUI	D1 NG 3	
5Pr(.141	MESSAGES		
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### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD · PHONE (616) 463-5588 · WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

TO: KA/AMAZOO	water Rice	lamation Plant
ATTN: Tim N	Teulew Berg	
FROM: TOM	Miller	
FAX NUMBER 337-	8699	<del></del>
NUMBER OF PAGES FOLLOW	ING THIS COVER SHE	ET
SENT BY J/M	TIME //:-35 D	ATE 1/28/92

FAX NUMBER 616-463-7133

Here Are results of monthly Test We Aguerd To Do on our JAn 6, 1992 Letter

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 920033 Client No.: 1208 Date Activated: 1/06/92 Date Promised: 1/27/92 Date Reported: 1/27/92

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 920033. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

ellim H Bouma

Director

WHB/sm

KAR Laboratories, inc.

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Project No.: Client No.:

920033 1208

Project Date: 1/06/92 Date Promised: 1/27/92 Date Reported: 1/27/92

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 920033-01 Sample type: aqueous Rec'd on: 1/06/92

ID: "Leachate, 1/6/92, 10:00"

COD 10,200 mg/L MDNR Scan 1 & 2 See attached Cyanide, total 0.03 mg/LArsenic, total 0.01 mg/L Cadmium, total <0.005 mg/L Chromium, total 0.05 mg/L Copper, total <0.01 mq/L Lead, total 0.005 mg/LMercury, total <0.0005 mg/L Nickel, total 0.26 mg/L Silver, total 0.006 mg/L Zinc, total 0.73 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 920033 Report Date: 1/27/92 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 920033-01 Sample type: aqueous Rec'd on: 1/06/92

Sample ID: "Leachate, 1/6/92, 10:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane 67	2.6
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	3.0	Methylene chloride	42
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	37	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	6.9	Trichloroethene	ND
1,2-Dichloroethane	<i>32</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Winyl chloride	2.7
cis-1,2-Dichloroethene	ND		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	29	m-and/or p-Xylene	190
Ethyl benzene	80	o-Xylene	80
Toluene	480		

Concentrations are expressed as ug/L. --- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10. U.S. EPA Method 8260.

0:2

ORCHARD HILL SANITARY LANDFILL B HENNESY ROAD - PHONE (616) 463-5588 - WATERVLIET, MICHIGAN 49098 3 z90

#### FAX MESSAGE COVER SHEET

TO:		Xa/	WASTE	poster	<u>'.                                    </u>		
ATTN	: <u>/</u> [M	Meulen	Berg			_	
FROM	:	evry	Miller	·			
FAX	NUMBER	33	7-869	9			
ииив	ER OF PAG	ES FOLLO	WING THIS	COVER S	HEET 3		
SENT	BY J/M	<del>/</del>	TIME		DATE		<del>-</del>
			<b>-</b> 463-7133				
012 +	Diense	AND	MBAS	SAMP	rles A	T 6.	4 B.
	FAX 1						
			Sen	-J 1/1	alh		

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED ORCHARD HILL LANDFILL

Proj. No.: 920592 Client No.: 1208 Date Activated: 3/16/92 Date Promised: 4/06/92 Date Reported: 4/06/92

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 920592. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

> William H. Bouma, Ph.D.

Director

WHB/sm

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

Project No: 920592 To: Orchard Hills Landfill

Report Date: 4/06/92

Project Desc.: Analysis of one leachate sample.

Sample No.:920592-01 Sample type: aqueous Received on: 3/16/92

ID: "Leachate, 3/16/92, 10:00am"

MDNR Scan 1 & 2 See attached COD 10,700 mg/L Arsenic, total  $0.01~{
m mg/L}$ Cadmium, total <0.005 mg/L Chromium, total 0.05 mg/LCopper, total 0.01 mg/L0.005 mg/L Lead, total Mercury, total <0.0005 mg/L Nickel, total 0.28 mg/L Silver, total <0.005 mg/L Zinc, total 0.44 mg/L

Sample No.:920592-02 Sample type: aqueous Received on: 3/18/92

ID: "Leachate, 3/17/92, 9:00"

Cyanide, total 0.04 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill Project No.: 920592

Report Date: 4/06/92

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 920592-01 Sample type: aqueous Rec'd on: 3/16/92

Sample ID: "Leachate, 3/16/92, 10:00am"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	2.3
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	5.0	Methylene chloride	60
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	6.6	Trichloroethene	ND
1,2-Dichloroethane	ND	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	18	<del>-</del>	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	50	m-and/or p-Xylene	310
Ethyl benzene	130	o-Xylene	95
Toluene	500	_	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10.

U.S. EPA Method 8260.

# KALAM. .OO WATER RECLAMATIC PLANT INDUSTRIAL USER SELF-MONITORING REPORT

(1) Facility:	Orchard Hill L 3378 Hennes				(2) Due Date:	January 10, 1	1992
	Watervliet, M	•			(3) Sample Po	int Code: OHL	-
(4) Location:	Septage Haul Pump Station		on at the City of	Kalamazoo Wa	ter Reclamation	Plant west of	the Raw Sewage
(5) Purpose fo	or Sampling:	☑ Routine p ☐ Violation ☐ Other:	periodic report. F Resampling	Period: <u>July 1, 1</u>	1 <u>991 - Decembe</u>	<u>r 31, 1991</u>	
(6) Sampling	Method:	quaB	5Ample				
(7) Date and	Time of Compo	site Samples:	Start:	, <u>, , , , , , , , , , , , , , , , , , </u>	End:		
(8) Date and	Time of Grab S	amples:	11/25/91	10.00 9.00	AM		
(9)			12/12/9/ RE	SULTS	9		
<u>Parameter</u>	<u>Value</u>	Units	Sample Type*	<u>Parameter</u>	<u>Value</u>	Units	Sample Type*
Cadmium, T	2.00 5	mg//		Mercury, T	LO .0005	Mg/L	<u>_</u>
Chromium, T	0.04		$\mathcal{L}$	Cyanide, T	0.07		
Copper, T	0.12		y	pН	8,4	S, U.	2
Lead, T	0.018		<u></u>	PCB, T	40.1	09/2	<u> </u>
Nickel, T	0.21		S				
Zinc, T	0.42		Ŋ				
* Sample Type	: G = Grab sampl	e C = Composi	te Sample				
(10) Name of	Laboratory		LABS		(Attacl	h copies of Lal	boratory Results)
(11) Flow: A	verage Daily	700	0	M	aximum Daıly	14,000	
designed to who manag and belief, fine and im	o assure that quali ge the system, or th true, accurate, and prisogment for kno	fied personnel pro nose persons direc d complete. I am owing violations.	perly gather and eva tly responsible for gat	lluate the information thering the information significant penalties	in submitted. Based on, the information si for submitting false	on my inquiry of ubmitted is, to the	ordance with a system the person or persons best of my knowledge uding the possibility of
		· · · · · · · · · · · · · · · · · · ·		·····			

Mail to:

iNDUSTRIAL PRETREATMENT COORDINATOR
Kalamazoo Water Reclamation Plant
1415 N. Harrison
Kalamazoo, MI 49007-2565

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 912852

Report Date: 12/31/91

Project Desc.: Analysis of one Leachate sample.

Sample No.:912852-01 Sample type: aqueous Received on: 12/12/91

ID: "12/12/91, 9:00am"

PCB, total <0.1 ug/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 912852
Report Date: 12/31/91

Report Date: 12/31/91

Project Desc.: Analysis of one Leachate sample.

Sample No.:912852-01 Sample type: aqueous Received on: 12/12/91

ID: "12/12/91, 9:00am"

PCB, total <0.1 ug/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	/ `/	
(616) 381-9666	$\bigvee$	-

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 912852 Client No.: 1208 Date Activated: 12/12/91 Date Promised: 1/02/92 Date Reported: 12/31/91 PO#:

Project Desc.: Analysis of one Leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 912852. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	^ ^
(616) 381-9666	$\bigvee\bigvee$

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED DEC 11 1991 ORCHARD HILL LANDFILL

Proj. No.: 912695 Client No.: 1208 Date Activated: 11/25/91 Date Promised: 12/16/91 Date Reported: 12/10/91

PO#:

Project Desc.: Analysis of one aqueous sample.

#### Dear Client:

Attached you will find test results for Project No. 912695. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

> William H. Bouma, Ph.D.

Director

WHB/kb

KAR Laboratories, Inc. Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 912695
Report Date: 12/10/91

Project Desc.: Analysis of one aqueous sample.

Sample No.:912695-01 Sample type: aqueous Received on: 11/25/91

ID: "Leachate, 11/25/91, 10:00"

COD	7800	mg/L
PH	8.4	S.U.
MDNR Scan 1 & 2	See attached	
Cyanide, total	0.07	mg/L
Arsenic, total	0.01	mg/L
Cadmium, total	<0.005	mg/L
Chromium, total	0.04	mg/L
Copper, total	0.12	mg/L
Lead, total	0.018	$m\dot{g}/L$
Mercury, total	<0.0005	mg/L
Nickel, total	0.21	mg/L
Silver, total	<0.005	mg/L
Zinc, total	0.42	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill Project No.: 912695
Report Date: 12/10/91

• , ,

Proj. Desc.: Analysis of one aqueous sample.

Sample No.: 912695-01 Sample type: aqueous Rec'd on: 11/25/91

Sample ID: "Leachate, 11/25/91, 10:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	4.3	Methylene chloride	42
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	1.6
1,1-Dichloroethane	5.7	Trichloroethene	1.7
1,2-Dichloroethane	57	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	6.3
cis-1,2-Dichloroethene	13	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	36	m-and/or p-Xylene	97
Ethyl benzene	50	o-Xylene	47
Toluene	260	-	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10. U.S. EPA Method 8260.

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3290 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED
DEC 11 1991

ORCHARD HILL LANDFILL Proj. No.: 912695 Client No.: 1208 Date Activated: 11/25/91 Date Promised: 12/16/91 Date Reported: 12/10/91

PO#:

Project Desc.: Analysis of one aqueous sample.

#### Dear Client:

Attached you will find test results for Project No. 912695. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 912695
Report Date: 12/10/91

Project Desc.: Analysis of one aqueous sample.

Sample No.:912695-01 Sample type: aqueous Received on: 11/25/91

ID: "Leachate, 11/25/91, 10:00"

COD	7800	mg/L
PH	8.4	s.u.
MDNR Scan 1 & 2	See attached	
Cyanide, total	0.07	mg/L
Arsenic, total	0.01	mg/L
Cadmium, total	<0.005	mg/L
Chromium, total	0.04	mg/L
Copper, total	0.12	mg/L
Lead, total	0.018	mg/L
Mercury, total	<0.0005	mg/L
Nickel, total	0.21	mg/L
Silver, total	<0.005	mg/L
Zinc, total	0.42	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 912695 Report Date: 12/10/91 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one aqueous sample.

Sample No.: 912695-01 Sample type: aqueous Rec'd on: 11/25/91

Sample ID: "Leachate, 11/25/91, 10:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	4.3	Methylene chloride	42
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	1.6
1,1-Dichloroethane	5.7	Trichloroethene	1.7
1,2-Dichloroethane	57	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	6.3
cis-1,2-Dichloroethene	13	_	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	36	m-and/or p-Xylene	97
Ethyl benzene	50	o-Xylene	47
Toluene	260	-	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10. U.S. EPA Method 8260.

KAR Laboratories, Inc. Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 912541
Report Date: 11/20/91

Project Desc.: Analysis of two aqueous samples.

Sample No.:912541-01 Sample type: aqueous Received on: 11/07/91

ID: "Leachate, 11/07/91, 11:00"

COD	10,500	mg/L
MDNR Scan 1 & 2	See attached	
Cyanide, total	<0.02	mg/L
Arsenic, total	0.01	mg/L
Cadmium, total	<0.005	mg/L
Chromium, total	0.06	mg/L
Copper, total	0.08	mg/L
Lead, total	0.007	mg/L
Mercury, total	<0.0005	mg/L
Silver, total	<0.005	mg/L
Zinc, total	0.69	mg/L

Sample No.:912541-02 Sample type: aqueous Received on: 11/07/91

ID: "EW3, 11/07/91, 9:00"

MDNR Scan 1 & 2 See attached

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill Project No.: 912541
Report Date: 11/20/91

Proj. Desc.: Analysis of two aqueous samples.

Sample No.: 912541-01 Sample type: aqueous Rec'd on: 11/07/91

Sample ID: "Leachate, 11/07/91, 11:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	1.3
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	3.2	Methylene chloride	3 <i>2</i>
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	2.9
1,1-Dichloroethane	7.1	Trichloroethene	2.1
1,2-Dichloroethane	8 <i>6</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	6.8
cis-1,2-Dichloroethene	15	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	28	m-and/or p-Xylene	110
Ethyl benzene	43	o-Xylene	47
Toluene	300	<del>-</del>	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10. U.S. EPA Method 8260.



#### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD - PHONE (616) 463-5588 - WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

ATTNITIM Meulew Bing
FROM. J Millau
FAX NUMBER
NUMBER OF PAGES FOLLOWING THIS COVER SHEET
SENT BY $\frac{5/M}{11/22/9}$ TIME $\frac{10:50}{22/9}$ DATE $\frac{11/22/9}{2}$

FAX NUMBER 616-463-7133

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED

NOV 21 1991

ORCHARD HILL LANDFILL Proj. No.: 912541
Client No.: 1208
Date Activated: 11/07/91
Date Promised: 11/27/91
Daate Reported: 11/20/91

PO#:

Project Desc.: Analysis of two aqueous samples.

#### Dear Client:

Attached you will find test results for Project No. 912541. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

11/22/91 11.10 261 4637133 ORCHARD HILL --- KAL. WASTE WATER 2003/004

Page 1 KAR Laboratories, Inc.

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 912541

Report Date: 11/20/91

Project Desc.: Analysis of two aqueous samples.

Sample No.:912541-01 Sample type: aqueous Received on: 11/07/91

ID: "Leachate, 11/07/91, 11:00"

COD 10,500 mg/L MDNR Scan 1 & 2 See attached Cyanide, total <0.02 mg/L Arsenic, total 0.01 mg/L Cadmium, total <0.005 mg/L Chromium, total 0.06 mg/L Copper, total 0.08 mg/L Lead, total 0.007 mg/L Mercury, total <0.0005 mg/L Silver, total <0.005 mg/L Zinc, total 0.69 mg/L

Sample No.:912541-02 Sample type: aqueous Received on: 11/07/91

ID: "EW3, 11/07/91, 9:00"

MDNR Scan 1 & 2 See attached

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill Project No.: 912541

Report Date: 11/20/91

Proj. Desc.: Analysis of two aqueous samples.

Sample No.: 912541-01 Sample type: aqueous Rec'd on: 11/07/91

Sample ID: "Leachate, 11/07/91, 11:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	1.3
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	3.2	Methylene chloride	3 <i>2</i>
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	2.9
1,1-Dichloroethane	7.1	Trichloroethene	2.1
1,2-Dichloroethane	8 <i>6</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	6.8
cis-1,2-Dichloroethene	15	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	28	m-and/or p-Xylene	110
Ethyl benzene	43	o-Xylene	47
Toluene	300	-	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10. U.S. EPA Method 8260.

parameter	VALUE		Units		Sample Type	
1,4-DICHLOROBENZENE	5.000				GRAB	01:00 PM
Mean	5.000					
parameter	VALUE		Units	Date	Sample Type	Sample Time
AMMONIA-NITROGEN	926.000	-			GRAB	01:00 PM
Mean	926.000					
parameter	VALUE	•••	Units	Date	Sample Type	
BENZENE	0.000	*	ug/l		GRAB	01:00 PM
Mean	0.000					
parameter	VALUE		Units	Date	Sample Type	Sample Time
CADMIUM	48.700	••••	ug/1	10/09/91		01:00 PM
Mean	48.700					
parameter	VALUE	•••	Units	Date		Sample Time
CBOD 5-DAY	6000.000	••••	mg/l	10/09/91		01:00 PM
Mean	6000.000					
parameter	VALUE				Sample Type	Sample Time
CHROMIUM	86.000				GRAB	01:00 PM
Mean	86.000					
parameter	VALUE		Units		Sample Type	Sample Time
COD	12470.000		mg/l	10/09/91	GRAB	Ø1:00 PM
Mean	12470.000					
parameter	VALUE	•	Units		Sample Type	
COPPER	121.000	•••	ug/l	10/09/91	GRAB	01:00 PM
Mean	121.000					

<sup>\*</sup> indicates test results below detection limits

par ameter	VALUE	••••	Units		Sample Type	
CYANIDES	579.000	•••			GRAB	01:00 PM
Mean	579.000					
parameter	VALUE		Units	Nample Date	Sample Type	
ETHYLBENZENE	37.000	•••	ug/l		GRAB	01:00 PM
Mean	37.000					
parameter	VALUE	***	Units		Sample Type	
LEAD	372.000	****	ug/l	10/09/91	GRAB	01:00 PM
Mean	372.000					
parameter	VALUE		Units		Sample Type	
MERCURY	3.100			10/09/91	GRAB	01:00 PM
Mean	3.100					
parameter	VALUE	••••			Sample Type	Sample Time
NICKEL	689.000	••••	ug/l	10/09/91	GRAB	01:00 PM
Mean	689.000					
parameter	VALUE	****	Units	~ample Date	Sample Type	Sample Time
OIL & GREASE	238.700	•••	mg/1	10/09/91	GRAB	01:00 PM
Mean	238.700					
paramet <b>er</b>	VALUE			Sample Date		Sample Time
SILVER	0.000	*	ug/1	10/09/91	GRAB	01:00 PM
Mean	0.000					
parameter	VALUE	•••		Sample Date	Sample Type	
TOLUENE	331.000		ug/l	10/09/91	GRAB	01:00 PM
Mearı	331.000					

<sup>\*</sup> indicates test results below detection limits

parameter	VALUE	•••	Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	1.560			10/09/91		01:00 PM
Mean	1.560					
parameter	VALUE	•••	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	334.000	•••	mg/l	10/09/91	GRAB	01:00 PM
Mean	334.000					
parameter	VAL UE		Units	Sample Date	Sample Type	Sample Time
TRANS-1, 2-DICHLOROET			na/I	10/09/91		01:00 PM
Mean	56.000					
parameter	VALUE		Units	Sample Date		Sample Time
VOLATILE SUS. SOLIDS	98.000	•	mg/l	10/09/91	GRAB	01:00 PM
Mean	98.000					
parameter	VAL UE		Units	Sample Date	Sample Type	Sample Time
XYLENE	113.000			10/09/91		01:00 PM
Mean	113.000					
parameter	VALUE		Units		Sample Type	Sample Time
ZINC	572.000		ug/l	10/09/91	GRAB	
Mean	572.000					
	VALUE	*****	Units		Sample Type	Sample Time
рН	8.300		S.U.	10/09/91	GRAB	01:00 PM
Mean	8.300					

<sup>\*</sup> indicates test results below detection limits

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3	Orchard Hill Balking Truck	BAL28291	1-14	10/9/91	1:00 Pm		4	Barkong/ 11 Truck/	"/ CONV	RECEIVED B	RECEIVED (Signature)
4	Orchard 1111 OAlkana Truck	i	1-14	19/9/91	1100 Pm		H	11 11/11	"/ Metals	1	
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# Fire & Environmental Consulting Laboratories, Inc.

One East Complex 1451 East Lansing Dr , Suite 222 East Lansing, MI 48823 (517) 332-0167 FAX (517) 332-6333 Indianapolis (317) 879-0913 FAX (317) 879-0914

October 29, 1991

City of Kalamazoo 1415 N. Harrison Kalamazoo, MI 49007

Attention: Mr. Nasım Ansarı

#### Analytical Laboratory Report

FECL #: 7973-91-E1

Samples analyzed by: J. Blaszczyk Samples collected by: Gwen Jones Analyses requested by: N. Ansari

Date/time samples submitted: 10-14-91 8:24 am

PO #: 53286

Submitting Company: City of Kalamazoo

1415 N. Harrison Kalamazoo, MI 49007

Project Description: Compliance Monitoring

Samples Collected:

FECL #: 7973-91-E1

Tag: 1 Orchard Hill Balkema Truck BAL 28291

Container: Glass Vials Sample type: Liquid Preservation: None

Sampling date/time: 10-09-91 1:00 pm



Analytical Laboratory Report

City of Kalamazoo FECL #: 7973-91-E1 October 29, 1991 Page 2 of 3

FECL #: 7973-91-E1
Tag: 1 Orchard Hill

Balkema Truck BAL 28291

#### Method 601 - Purgeable Halocarbons

Bromodichloromethane	<0.001	mg/l
Bromoform	<0.001	mg/l
Bromomethane	<0.001	mg/l
Carbon tetrachloride	<0.001	mg/1
Chlorobenzene	<0.001	mg/l
Chloroethane	<0.001	mg/l
2-Chloroethylvinyl ether	<0.001	mg/l
Chloroform	<0.001	mg/l
Chloromethane	<0.001	mg/l
Dibromochloromethane	<0.001	mg/l
1,2-Dichlorobenzene	<0.001	mg/l
1,3-Dichlorobenzene	<0.001	mg/1
1,4-Dichlorobenzene	0.005	mg/l
Dichlorodifluoromethane	<0.001	mg/1
1,1-Dichloroethane	<0.001	mg/l
1,2-Dichloroethane	0.297	mg/l
1,1-Dichloroethene	<0.001	mg/1
t-1,2-Dichloroethene	0.056	mg/l
1.2-Dichloropropane	<0.001	mg/1
c-1,3-Dichloropropene	<0.001	mg/1
t-1,3-Dichloropropene	<0.001	mg/l
Methylene chloride	<0.001	mg/l
1,1,2,2-Tetrachloroethane	<0.001	mg/1
Tetrachloroethene	<0.001	mg/l
1,1,1-Trichloroethane	<0.001	mg/l
1,1,2-Trichloroethane	<0.001	mg/l
Trichloroethene	<0.001	mg/l
Trichlorofluoromethane	<0.001	mg/l
Vinyl chloride	<0.001	mg/l



Analytical Laboratory Report

City of Kalamazoo FECL #: 7973-91-E1 October 29, 1991

Page 3 of 3

FECL #:

7973-91-E1

Tag:

1 Orchard Hill

Balkema Truck BAL 28291

#### Method 602 - Purgeable Aromatics

Benzene	<0.001	mg/l
Ethylbenzene	0.037	mg/l
Toluene	0.331	mg/l
p,m-Xylene	0.080	mg/l
o-Xylene	0.033	mg/l

V.F. Marshak Violetta F. Murshak Laboratory Manager

VFM/ajc

CITY OF KAI			AIN OF CUSTO	DY KEC	CKD A	<b>AND</b>	LAE	S ANALYSIS	REPORT FORM	31 <b>3</b> 1.70	0.1.1
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Kalamazoo, Mich 616 385-8157	ngan 49007	(5.9,10.	They -	)one	1-		_en	mpliane	2 Monitoring		T.,,
ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	D A T E	T I M E	C O M P	G R A B	SAMPLE LOC.	ATION, DESCRIPTION REMARKS	DATE/TIME 10 C 24	DATE/TIME
	Orchard Hill (BAIKOMA Trok	BAL28291	1 2.50 ml	199/91	1:00 Pn		H		rold MANR 1-2	Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z Z	34
										RECEIVED B (Signature)	E (e)
										DATE/TIME	DATE/TIME
					_					<u>*</u>	34
										3 RELINQUISHED E (Signature)	4 RELINQUISHED B (Signature)
GENERAL/CO	ONVENTIONAL	RESULT	RACE METALS	RES	ULTORG	ANIC	СОМР	OUNDS RESULT		FETTIME 1 8:24 1 ATT	DATE/TIME
рН			CADMIUM			EPA MI	ETHOD	601		A DET	DA
BOD			TOTAL CHROMIUM								
CBOD			HEX CHROME							PBY CM	   <u>≿</u>
COD			COPPER							ED E	ED B
TSS			LEAD							CEIV	RECEIVED (Signature)
vss			NICKEL							Signal (Signal )	RE(
NH3-N			ZINC			EPA MI	ETHOD	602		12 July 27	
TOTAL P			SILVER							8.2 14/1	S'ZY
ORTHO	P		MERCURY							II	DATE DATE
GREASE	/OIL		BERYLLIUM							13	-
CHLORI	DE		BARIUM						ġ	D BY	58 d
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CN AMI	ENABLE					OTHER	M	DNR	REMARKS.	RELINQUISHED IS (Signature)	ELINOUIS Signature)
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### GREASE . J OIL, FREON EXTRACTION Gravimetric Method

Date Analyzed 10-10-9	Sa	ample ID # $\beta$	AL 28291	
Analyst Ab				
Gms. Flask+Residue	151.9187		$(\mathcal{N})$	
Gms. Flask	15/.70/5		,	
Gms. G & O	.2172	X 1000	= 217.2	Mgs.
Sample Volume in mLs	910	÷ 1000	= 0.91	L.
Mgs/Volume in L.	217.2/0,91	= 238.7	ng/LG&O	
Date Analyzed		mple ID #		
Gms. Flask+Residue				
Gms. Flask				
Gms. G & O		X 1000	=	Mgs.
Sample Volume in mLs		÷ 1000	=	L.
Mgs/Volume in L.		E '	mg/L G & O	
Date AnalyzedAnalyst	&:	ample ID #		
Gms. Flask+Residue				
Gms. Flask				
Gma		X 1000:	E	Mgs
Sample Volume in mLe		÷ 1000	=	L.
Mgs/Volume in L.		=	mg/L G & O.	······································

SAMPLE	E ID	BAL 282	. 282.9 91	1 BAL 282	-91 -91			 	
DISH	D.F.	B	4	9!	9				
WT.DIS	SH&SOL.	242	885	258	<u> </u>				Analyst
WT.DIS	SH	242	818	257	1949				Date Analyzed 10/10/9
MG/L S	OL	264	66	404	101	(334	10	L	( a)
WT.DIS	H&SOL.	24Z	384	258	30 <u>5</u> 0.				
WT.DIS	H&ASH	242	865	258	565Q				
MG/L V	OL.SOL.	76	19	120	30	98			

SAMPLE	E ID TC	BAL 283	-91	BAL 283	LDnp) -91			 ··-	
DISH	D.F.	T,NT		A6					
WT.DIS	SH&SOL.	N	0 9	5am	ple	S	70		Analyst
WT.DIS	SH	272	401	262	352		,		Date Analyzed 10/11/9
MG/L S	SOL								bace mary zed to the
WT.DIS	SH&SOL.								
WT.DIS	H2A3H								
MG/L V	OL.SOL.								

SAMPLE	Z ID						
DISH	D.F.						
WT.DIS	SH&SOL.	*				<u> </u>	5 mm l mat
WT.DIS	SH		•				Analyst
MG/L· S	SOL	1					Date Analyzed
WT.DIS	SH&SOL.				*******		
WT.DI:	SH&ASH						
MG/L	vol.sol.						

## KALAMAZOO WATER RECLAMATION PLANT INDUSTRIAL PRETREATMENT SAMPLES D.O. & B.O.D.

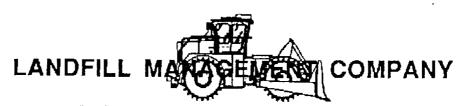
CBOD

Test Date	Sample Source	ML.	Bott. No.	1.0.0. mg/L (B)	F.D.O.5 mg/L (C)	D.O. Depletion (B-C=D)	Dilution Factor (300 ± A = E	8.0.D. mg/L (D × E)	Avg. B.O.D. mg/L	Remarks
10/10	Blank (Seeded)	0	30	8,5	80	0.5	_	05	05	£m51015-91
	BAL 28291	3	610	8,5	5.5	3.0	100	6000	6000	Due Date 10-15-91
	20:1 Dilution	10	35	8.5	0.1	8.4	30			Sample Date 10-9-91
		30	25	8.5	0.1	8.4	10			Test Date 10-10-91
		75	13	8.4	6.1	8.3	4			KM/JS

Test Date	Sample Source	ML.	Bott. No.					Remarks
10/11	Blank (Seeded)	0						
	BAL28391	3		^	15			Due Date
	20:1 Dilution	10			1			Sample Date
		30						Test Date
		75						

Test	Sample		Bott.				}	Remarks
Date	Source	ML.	No.			 	 	
10/12	Blank (Seeded)	0			( -			
	BAL28491	3		1	IS			Due Date
	20:1 Dilution	10		,				Sample Date
		30						Test Date
		75						

Test	Sample		Bott.				Remarks
Date	Source	ML.	No.				
	Blank (Seeded)	0					
		3					Due Date
	20:1 Dilution	10					Sample Date
		30					Test Date
		75		·			



#### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

TO: Kalamazoo Waste Water	
ATTN: Bruce Merchant	
FROM: Jerry Miller	
FAX NUMBER 385-8157	
NUMBER OF PAGES FOLLOWING THIS COVER SHEET 3	
SENT BY TIME_ 8:55 DATE4/24/9	<del>)</del> 1

FAX NUMBER 616-463-7133

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 910681 Client No.: 1208 Date Activated: 4/05/91 Date Promised: 4/26/91 Date Validated: 4/22/91 Date Reported: 4/22/91 PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 910681. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

Loads 465 - 476

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 910681 Report Date: 4/22/91

Project Desc.: Analysis of one leachate sample.

Sample No.:910681-01 Sample type: aqueous Received on: 4/05/91

ID: "Leachate, 4/5/91, 8:00"

10,100 mg/L MDNR Scan 1 & 2 See attached Cyanide, total 0.02 Arsenic, total <0.1 0.02 mg/L <0.1 mg/L

High detection limit was due to sample matrix interference.

Cadmium, total <0.005 mg/L Chromium, total 0.06 mg/L Copper, total 0.04 mg/LLead, total 0.004 mg/L Mercury, total Nickel, total Silver, total <0.0005 mg/L 0.28 mg/L <0.005 mg/L Zinc, total 0.69 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill

Project No.:

910681

Report Date: 4/22/91

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 910681-01 Sample type: aqueous Rec'd on: 4/05/91

Sample ID: "Leachate, 4/5/91, 8:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2~Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.4	Methylene chloride	7 <i>6</i>
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	4.6	Trichloroethene	2.6
1,2-Dichloroethane	98	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	71	•	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	48	m-and/or p-Xylene	94
Ethyl benzene	42	o-Xylene	48
Toluene	300	-	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10



#### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

TO:	KAI WASTE WATER
· NTTA	Bruce Machant
	J Miller
FAX NUMBER _	./-385-3015
NUMBER OF PA	GES FOLLOWING THIS COVER SHEET
SENT BY	1M TIME 11:40 DATE 3/14/9/

FAX NUMBER 616-463-7133

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, Mi 49002

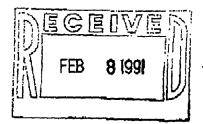
(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller



Proj. No.: 910153
Client No.: 1208
Date Activated: 1/23/91
Date Promised: 2/13/91
Date Validated: 2/06/91
Date Reported: 2/07/91
Po#:

Project Desc.: Analysis of one leachate sample.

Dear Client:

Attached you will find test results for Project No. 910153. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

MHB/sm

441 - 452

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 910153 Report Date: 2/07/91

Project Desc.: Analysis of one leachate sample.

Sample No.:910153-01 Sample type: aqueous Received on: 1/23/91

ID: "1/23/91, 8:00am"

COD 10,500 mg/L MDNR Scan 1 & 2 See attached Cyanide, total 0.03 mg/L Arsenic, total Cadmium, total 0.050 mg/L <0.005 mg/L Chromium, total 0.06 mg/L Copper, total 0.04 mg/L Lead, total 0.004 mg/L Mercury, total <0.0005 mg/L Nickel, total Silver, total 0.29 mg/L <0.01 mg/L 0.68 mg/L Zinc, total

Unless otherwise noted, test results represent the sample(s) as they were received.

03/14/91

KAR Laboratories, Inc.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill

Project No.:

910153

Report Date:

2/07/91

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 910153-01

Sample type: aqueous Rec'd on: 1/23/91

Sample ID: "1/23/91, 8:00am"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	,ND	1,2-Dichloropropané	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.1	Methylene chloride	110
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	. <b>N</b> D	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	7.2	Trichloroethene	2.2
1,2-Dichloroethane	<i>65</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	43	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	3 Ò	m-and/or p-Xylene		120
Ethyl benzene	50	o-Xylene		52
Toluene	320	o Ayrene	•	72

Concentrations are expressed as ug/L. --- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10

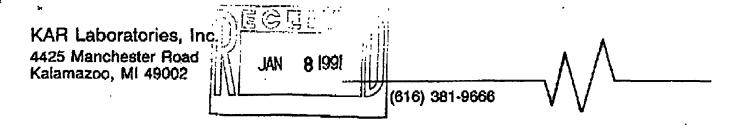


#### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

TO:	KAL	water	Rectains	ation
ATTN: Br				
FROM:	J mili	ev		
fax number	385-	30/5		
NUMBER OF PAGES F	OLLOWING THIS C	OVER SHEET_	3_	
SENT BY IM	TIME <u>\$15</u>	20 DATE	2/1/9/	

FAX NUMBER 616-463-7133



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 903371
Client No.: 1208
Date Activated: 12/17/90
Date Promised: 1/07/91
Date Validated: 1/07/91
Date Reported: 1/07/91

PO**#:** 

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 903371. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

417-429

Page

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: Report Date: 1/07/91

Project Desc.: Analysis of one leachate sample.

Sample No.:903371-01 Received on: 12/17/90 Sample type: aqueous

ID: "Leachate, 12/17/90, 10:00 am"

COD 11,600 mg/L MDNR Scan I & 2 See attached Cyanide, total Arsenic, total 0.03 mg/L 0.37 mg/L Cadmium, total <0.005 mg/L Chromium, total 0.10 mg/L Copper, total 0.08 mg/L 0.010 mg/L Lead, total Mercury, total <0.0005 mg/L Nickel, total Silver, total 0.47 mg/L <0.005 mg/L Zinc, total 0.12 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill

Project No.: Report Date:

903371 1/07/91

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 903371-01 Sample type: aqueous Rec'd on: 12/17/90

Sample ID: "Leachate, 12/17/90, 10:00 am"

#### SCAN 1 - Purgeable Halocarbons

ND
ND
ND
e ND
110
⊇ ND
ND
<b>N</b> D
ND
3.5
ND
ND

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	18	m-and/or p-Xylene		160
Ethyl benzene	66	o-Xylene	•	70
Toluene	490	<del>-</del>		

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10

submitted by\_

AND TO SEE SEE AND A SEE A VILL

(616) 381-9666
(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 910791
Client No.: 1208
Date Activated: 4/22/91
Date Promised: 5/13/91
Date Validated: 5/07/91
Date Reported: 5/08/91

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 910791. Please refer to this Project No. if you have any questions regarding this work.

MAY 9 1991

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D. Director

Cham H. Bouma

WHB/sm

frods 500

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill Project No: 910791

Report Date: 5/08/91

Project Desc.: Analysis of one leachate sample.

Sample No.:910791-01 Sample type: aqueous Received on: 4/22/91

ID: "Leachate, 4/22/91, 10:00"

11,300	mg/L
See attached	
0.09	mg/L
0.01	mg/L
<0.005	mg/L
0.07	mg/L
0.04	mg/L
0.011	mg/L
<0.0005	mg/L
0.46	mg/L
<0.005	mg/L
0.98	mg/L
	0.01 <0.005 0.07 0.04 0.011 <0.0005 0.46 <0.005

Unless otherwise noted, test results represent the sample(s) as they were received.

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 910791 Report Date: 5/08/91 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 910791-01 Sample type: aqueous Rec'd on: 4/22/91

Sample ID: "Leachate, 4/22/91, 10:00"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.1	Methylene chloride	280
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	16	Trichloroethene	3.0
1,2-Dichloroethane	100	${\tt Trichlorofluoromethane}$	ND
1,1-Dichloroethene	ND	Vinyl chloride	2.6
cis-1,2-Dichloroethene	40		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	3 <i>2</i>	m-and/or p-Xylene	110
Ethyl benzene	49	o-Xylene	47
Toluene	450	<del>-</del>	

Concentrations are expressed as ug/L. --- indicated not analyzed. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10 KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

RECEIVED

AUG 8 1991

ORCHARD HILL
LANDFILL

Proj. No.: 911513
Client No.: 1208
Date Activated: 7/17/91
Date Promised: 8/07/91
Date Validated: 8/07/91
Date Reported: 8/07/91

PO#:

Project Desc.: Analysis of one wastewater sample.

#### Dear Client:

Attached you will find test results for Project No. 911513. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

ORCHARD HILL

\*→→ KZOO WATER RECL. Ø005/007

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 911513 Report Date: 8/07/91

Project Desc.: Analysis of one wastewater sample.

Sample No.:911513-01 Sample type: aqueous Received on: 7/17/91

ID: "Leachate, 7/17/91, 10:35"

COD 14,300 mg/L See attached MDNR Scan 1 & 2 Cyanide, total Arsenic, total <0.02 mg/L <0.01 mg/L Cadmium, total < 0.005 mg/LChromium, total 0.09 mg/L Copper, total 0.18 mg/L Lead, total 0.058 mg/L 0.0031 mg/L Mercury, total Nickel, total Silver, total 0.52 mg/L <0.005 mg/L Zinc, total 2.32 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

. 10/08/91 14:40 ☎616 4637133 ORCHARD HILL →→→ KZOO WATER RECL. ☑ 006/007

KAR Laboratories, Inc.

## PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: Report Date: To: Orchard Hills Landfill 911513

8/07/91

Proj. Desc.: Analysis of one wastewater sample.

Sample No.: 911513-01 Sample type: aqueous Rec'd on: 7/17/91

Sample ID: "Leachate, 7/17/91, 10:35"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.9	Methylene chloride	200
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	9.9	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	23	Trichloroethene	2.5
1,2-Dichloroethane	61	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	29	<del>-</del>	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	· <i>37</i>	m-and/or p-Xylene	340
Ethyl benzene	120	o-Xylene	110
Toluene	840	-	

Concentrations are expressed as ug/L. --- indicated not analyzed. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10

## PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

Project No.: 910791 Report Date: 5/08/91 To: Orchard Hills Landfill

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 910791-01 Sample type: aqueous Rec'd on: 4/22/91

Sample ID: "Leachate, 4/22/91, 10:00"

## SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.1	Methylene chloride	280
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	16	Trichloroethene	3.0
1,2-Dichloroethane	100	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	2.6
cis-1,2-Dichloroethene	40	-	

## SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	3 <i>2</i>	m-and/or p-Xylene	110
Ethyl benzene	49	o-Xylene	47
Toluene	450	_	

Concentrations are expressed as ug/L.

--- indicated not analyzed.

"ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10



# ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

## FAX MESSAGE COVER SHEET

<b>T</b> 0:	KAL WA	stor Recl	AIMATIO	<u>N</u>	
ATTN:	Brice	Merch	14n +		
FROM:	J M.	Her			
FAX NUMBE	R <u>385</u>	5-30,	· 5		
NUMBER OF	PAGES FOLL	OWING THIS	COVER S	HEET_S	<u></u>
SENT BY _	Jm	TIME	7:25	DATE /2/	27/90

FAX NUMBER 616-463-7133

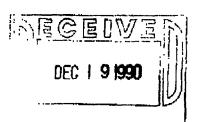
KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

## ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller



Proj. No.: 903166
Client No.: 1208
Date Activated: 11/26/90
Date Promised: 12/17/90
Date Validated: 12/17/90
Date Reported: 12/17/90
PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 903166. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

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KAR Laboratories, Inc.

Page 1

# ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 903166 Report Date: 12/17/90

Project Desc.: Analysis of one leachate sample.

Sample No.:903166-01 Sample type: aqueous Received on: 11/26/90

ID: "Leachate, 11/26/90, 13:30"

COD 11,400 mg/L MDNR Scan 1 & 2 See attached Cyanide, total Cadmium, total 0.03 mg/L <0.005 mq/L Chromium, total 0.04 mg/L Copper, total <0.2 mg/L Lead, total 0.045 mg/L Mercury, total <0.0005 mg/L Nickel, total Silver, total 0.30 mg/L <0.05 mg/L Zinc, total 0.48 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

# PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill

Project No.:

903166

Report Date:

12/17/90

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 903166-01

Sample type: aqueous Rec'd on: 11/26/90

Sample ID: "Leachate, 11/26/90, 13:30"

## SCAN 1 - Purgeable Halocarbons

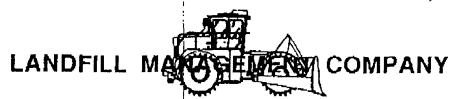
Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	30
Chl <i>oroethane</i>	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
<i>1,1-Dichloroethane</i>	ND	Trichloroethene	ND
1,2-Dichloroethane	49	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	21	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	11	m-and/or p-Xylene	76
Ethyl benzene	29	o-Xylene	40
Toluene	120	-	

Concentrations are expressed as ug/L. --- indicated not analyzed. "ND" means not detected. The limit of detection was 1

for all targets except Methylene chloride, which was 10



ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD . PHONE (616) 463-5588 . WATERVLIET, MICHIGAN 49098

FA) MESCAGE COVER SHEAT
TO: KAI WATER REclaimation
ATTN: Bruce Merchant
FROM: J Miller
FAX NUMBER 385-3015
NUMBER OF PAGES FOLLOWING THIS COVER SHEET 3
SENT BY J/M TIME 9:15 DATE 1/20/90

616-463-7133

FAX NUMBER

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

# ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 902786
Client No.: 1208
Date Activated: 10/12/90
Date Promised: 11/02/90

Date Validated: 11/02/90
Date Reported: 11/02/90

PO#:

Project Desc.: Analysis of 1 leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 902786. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

369-381

Page 1

To: Orchard Hills Landfill

Project No: 902786 Report Date: 11/02/90

Project Desc.: Analysis of 1 leachate sample.

Sample No.:902786-01 Sample type: aqueous Rec'd on: 10/12/90

ID: "Leachate, 10/12/90, 11:00"

COD		6000	mg/L
MDNR Scan 1 & 2	See	attached	
Cyanide, total		<0.02	mg/L
Cadmium, total		<0.005	mg/L
Chromium, total		0.05	mg/L
Copper, total		0.03	mg/L
Lead, total		0.024	mg/L
Mercury, total		<0.0005	mg/L
Nickel, total		0.25	mg/L
Silver, total		<0.005	mg/L
Zinc, total		0.30	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

To: Orchard Hills Landfill

Project No.: 902786 Report Date: 11/02/90

# PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 902786-01 Rec'd on: 10/12/90

Proj. Desc.: Analysis of 1 leachate sample. Sample ID: "Leachate, 10/12/90, 11:00"

## SCAN 1 - Purgeable Halocarbons

•	· · · · · · · · · · · · · · · · · · ·		
Bromodichloromethane	מא	trans-1,2-Dichloroethene	ND
Bromoform	ND.	1,2~Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND.	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.6	Methylene chloride	20
Chloroethane	ND	1,1,2,2-Tetrachloroethane	· ND
Chloroform	ND	Tetrachloroethene	ND
Chlotomethane	ND.	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	1.8
<i>1,1-Dic</i> hloroethane	7.1	Trichloroethene	3.0
1,2-Dichloroethane	7 <b>6</b>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND:	Vinyl chloride	16
cis-1,2-Dichloroethene	701		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	<i>55</i>	m-and/or p-Xylene	200
Ethyl benzene	61	o-Xylene	71
Toluene	360	•	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10



ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (6)163 463-5588 • WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

10: KAI WATER Reclaimation

ATTN: Bruce Meximation

FROM: J M. //ev

FAX NUMBER 385-8/82

NUMBER OF PAGES FOLLOWING THIS COVER SHEET 3

TIME 2.45

FAX NUMBER 616-463-7133

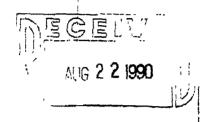
\*\*KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller



Proj. No.: 902094
Client No.: 1208
Date Activated: 8/01/90
Date Promised: 8/22/90
Date Validated: 8/21/90
Date Reported: 8/21/90

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 902094. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

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KAR Laboratories, Inc.

Page 1

## ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 902094 Report Date: 8/21/90

No sample was submitted

Project Desc.: Analysis of one leachate sample.

Sample No.:902094-01

Rec'd on: 8/01/90

ID: Leachate, 8/1/90

15,000 mg/L COD0.5 mg/L MBAS Oil and grease X mg/LMDNR Scan 1 & 2 See attached Cyanide, total Cadmium, total 0.57 mg/L <0.01 mg/L 0.05 mg/L Chromium, total Copper, total Lead, total 0.09 mg/L 0.054 mg/L Mercury, total <0.0005 mg/L Nickel, total Silver, total 0.53 mg/L <0.005 mg/L Zinc, total 0.79 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

To: Orchard Hills Landfill

Project No.:

902094

Report Date:

8/21/90

## PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 902094-01 Rec'd on: 8/01/90

Proj. Desc.: Analysis of one leachate sample. Sam: ID: Leachate, 8/1/90

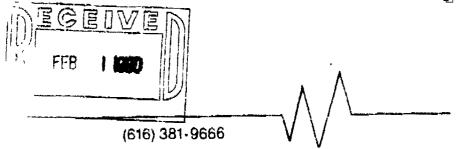
#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	55
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ŅĎ	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	ND
1,2-Dichloroethane	43	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	10		

## SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	3.7	m-and/or p-Xylene	34
Ethyl benzene	18	o-Xylene	71
Toluene	150	-	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10 KAR Laboratories, Inc. 4425 Marichester Road Kalamazoo, MI 49002



## ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennerey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Proj. No.: 900093 Client No.: 1059 Date Received: 1/10/90 Date Promised: 1/31/90 Date Validated: 1/31/90 Date Reported: 1/31/90

PO#:

Project Desc.: Analysis of one leachate sample.

## Dear Client:

Attached you will find test results for Project No. 900093. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

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KAR Lanoratories, Inc.

Page 1

## ANALYTICAL RESULTS

Project No: 900093 Report Date: 1/31/90

Sample No.:900093-01 Rec'd of ID: Orchard Hills Leachate, 1/10/90 Rec'd on: 1/10/90

COD		78,000	mg/L
MDNR Scan 1 & 2	See	attached	
Cyanide, total		0.08	mg/L
Cadmium, total		0.010	mg/L
Chromium, total		0.09	mg/L
Copper, total		0.05	mg/L
Lead, total		0.39	mg/L
Mercury, total		0.0006	mg/L
Nickel, total		0.19	mg/L
Silver, total		<0.005	mg/L
Zinc, total		8.08	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

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KAR Lationatories, inc.

Project No.: 900093 Report Date: 1/31/90

## FURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 900093-01 Rec'd on: 1/10/90

Sample ID: Orchard Hills Leachate, 1/10/90

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	1.2	1,2-Dichloropropane	ND
Bromomethane	K.N	cis-1,3-Dichloropropene	ND
Carbon tetrachlorids	CN	trans-1,3-Dichloropropene	ND
Chlorobenzene	NÐ	Methylene chloride	70
Chloroethane	СN	1,1,2,2-Tetrachloroethane	ND
Chloroform	NЭ	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	25	Trichloroethene	5.8
1,2-Dichloroethane	120	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	220		

# SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	3 <i>6</i>	m-and/or p-Xylene	370
Ethyl benzene	190	o-Xylene	150
Tolvene	480	-	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10



# ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

#### FAX MESSAGE COVER SHEET

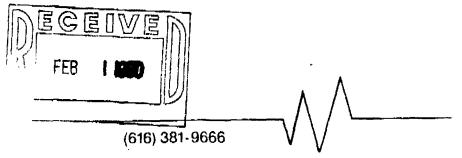
TO: TA/ WASTE WATER
ATTN: Bucce Micciant
FROM: Jevry Miller
FAX NUMBER 385-81-82
NUMBER OF PAGES FOLLOWING THIS COVEN SHEET
SENT BY $\frac{J/m}{}$ TIME $\frac{10.12}{}$ DATE $\frac{3/9/90}{}$

FAX NUMBER 616-463-7133

Buce This sample WAS TAKEN
Before The Plant went on line We have 2 samples + A sludge SAMPLE in At KAN NOW.

Thank you for mills

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Proj. No.: 900093 Client No.: 1059 Date Received: 1/10/90

Date Promised: 1/31/90
Date Validated: 1/31/90
Date Reported: 1/31/90

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 900093. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcr

249

Page 1

## ANALYTICAL RESULTS

Project No: 900093 Report Date: 1/31/90

Sample No.:900093-01 Rec'd on: 1/10/90 ID: Orchard Hills Leachate, 1/10/90

COD	78,000	mg/L
MDNR Scan 1 & 2	See attached	
Cyanide, total	0.08	mg/L
Cadmium, total	0.010	mg/L
Chromium, total	0.09	mg/L
Copper, total	0.05	mg/L
Lead, total	0.39	mg/L
Mercury, total	0.0006	mg/L
Nickel, total	0.19	mg/L
Silver, total	<0.005	mg/L
Zinc, total	8.08	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

*^^*2/09/90

Project No.:

900093

Report Date: 1/31/90

## PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 900093-01 Rec'd on: 1/10/90

Sample ID: Orchard Hills Leachate, 1/10/90

# SCAN 1 - Purquable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	1.2	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	70
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	25	Trichloroethene	5.8
1,2-Dichloroethane	120	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	220	_	

## SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	36	m-and/or p-Xylene	370
Ethyl benzene	190	o-Xylene	150
Toluene	480	<b>"</b>	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10



# ORCHARD HILL SANITARY LANDFILL 3376 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098



TAX MESSAGE COVER SHEET

13: KAL TECATOMENT Plant	
ATTN: Bouce Merchant	
FROM: JERNY MILLER	
FAX NUMBER 385-8/82	
NUMBER OF PASES FOLLOWING THIS COVER SHEET	
SENT BY 7/2 TIME 1:39 DATE 1/22/90	う

FAX NUMBER 616-463-7133

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In Laboratories, Inc. 1425 Manchester Road r\∃iamazoo, Mi 49002

LANDFILL MOMT --- CITY - KALAMAZOO

(616) 381-9666

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#### ANALYTICAL REPORT

10. Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: 892599 Client No.: 1059 Project Date: 12/18/89 Date Promised: 1/08/90 Date Reported: 1/09/90

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 892599-01 Rec'd on: 12/18/89

Sample ID: Orchard Hills Leachate, 12/18/89

CCL 178,000 mg/L

MDHR Scan 1 & 2 See attached

Cyanide, total 0.07 mg/L 0.05 mg/LCadmium, total Chromium, total 0.73 mg/L

Copper, total 0.17 mg/L

0.22 mg/L Lead, total

Poor detection limit <0.002 mg/l \* Metrury, total due to insufficient sample Nichel, total 0.61 mg/Lsize

<0.005 mg/L Silver, total

28.2 mg/L Zinc, total

Unless otherwise note; test results represent the sample(s) as they were received.

Respectfully submitted,

KAR Laboratories, Inc.

The second second

William H. Bouma, Ph.D

Director

Ker, Laboratories, Inc.

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MT 49098

Sample No.: 892599-01 Date Received: 12/18/89 Date Promised: 1/08/90 Date Reported: 1/09/90

Attn: Mr. Don Batts

Re: VOLATILE HYDROGAFBON ANALYSIS - Michigan DNR Scar 1 and Scan 2

Sample ID: Orchard Hills Leachate, 12/18/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ИD
Bromoforn	au	1,2-Dichloropropane	NL
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ML
Chlorobenzene	1.4	Methylene chloride	120
Chloroethane	112	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	1.5
Chloromethane	1:D	1,1,1-Trichloroethane	NI
Dibromochloromethane	KD	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	2.7	Trichloroethene	5.8
1,2-Dichloroethane	93	Trichlorofluoromethane	ИD
1,1-Dichlorosthene	ND	Vinyl chlorids	ND
cis-1,2-Dichlorcethenn	360		

# SCAN 2 - Purgeable Arcmatic Hydrocarbons

Senzana	] 4	m-and/or p-Xylene	41C
Ethyl benzens	<b>⊊</b> &	o-Xylene	170
Toluene	S20		

Concentrations are expressed as ug/b "ND" means not detect 6. The limit of detection was 1 for all compounds except Methylere chloride, which was 10

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Date: September 25, 1989

Project No.: 891756

Enclosed are the results of one leachate sample submitted September 5, 1989.

for LOAD 188- 199

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcr

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: Client No.:

891756 1059

Project Date:

9/05/89

Date Promised:

9/26/89

Date Reported:

9/25/89

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 891756-01 Rec'd on: 9/05/89

Sample ID: Orchard Hills, Leachate, 9/5/89

BOD 10,100 mg/L 16,600 mg/L COD Chloride 11,200 mg/L Nitrogen, ammonia 1150 mg/L Nitrogen, nitrate 53.3 mg/L Nitrogen, nitrite <0.1 mg/LPhosphate, ortho (as PO4) 14.6 mg/L MDNR Scan 1 & 2 See attached Cyanide, total 0.08 mg/L Oil and grease 72 mg/L Cadmium, total <0.005 mg/L Chromium, total 0.07 mg/L Copper, total 0.09 mg/L Lead, total 0.008 mg/LMercury, total < 0.0005 mg/LNickel, total 0.51 mg/L Silver, total <0.005 mg/L Zinc, total 0.27 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Date Received: 9/05/89 Date Promised: 9/26/89 Date Reported: 9/25/89

Sample No.: 891756-01

Attn: Mr. Don Batts

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills, Leachate, 9/5/89

## SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ИD	trans-1,2-Dichloroethene	ND
Bromoform	ИΩ	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ИĎ
Chlorobenzene	1.4	Methylene chloride	96
Chloroethane	ИD	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	1.3
Chloromethane	ИD	1,1,1-Trichloroethane	ND
Dibromochloromethane	ИD	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	21	Trichloroethene	6.1
1,2-Dichloroethane	75	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	45		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	23	m-and/or p-Xylene	325
Ethyl benzene	130	o-Xylene	148
Toluene	970	<del>-</del>	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098 Date: October 6, 1989

Project No.: 891867

Attn: Mr. Don Batts

Enclosed are the results of one leachate sample submitted September 15, 1989.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma

William H. Bouma, Ph.D. Director

WHB/mcr

for 200-212

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: Client No.:

891867 1059

Project Date:

9/15/89

Date Promised:
Date Reported:

10/06/89

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 891867-01 Rec'd on: 9/15/89

Sample ID: Orchard Hills, Leachate, 9/15/89

BOD 13,800 mg/L COD 14,800 mg/L Chloride 12,200 mg/L Nitrogen, ammonia 1050 mg/L Nitrogen, nitrate 56.3 mg/L Nitrogen, nitrite <0.1 mg/LPhosphate, ortho (as PO4) 13.4 mg/L Cyanide, total .03 mg/L Oil and grease 66 mg/L Cadmium, total 0.02 mg/L Chromium, total 0.17 mg/L Copper, total 0.06 mg/L Lead, total 0.10 mg/L Mercury, total <0.0005 mg/L Nickel, total 0.70 mg/L Silver, total <0.005 mg/LZinc, total 18.5 mg/L MDNR Scan 1 & 2 See attached

Unless otherwise noted, test results represent the sample(s) as they were received.

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Sample No.: 891867-01 Date Received: 9/15/89 Date Promised: 10/06/89 Date Reported: 10/06/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills, Leachate, 9/15/89

## SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	3.1	Methylene chloride	220
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ЙD	Tetrachloroethene	1.5
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	23	Trichloroethene	16
1,2-Dichloroethane	160	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	2.3
cis-1.2-Dichloroethene	120	•	

## SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	31	m-and/or p-Xylene	340
Ethyl benzene	120	o-Xylene	110
Toliene	760		

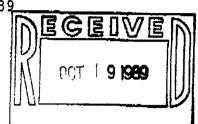
Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10



GRAND RAPIDS 616-361-6691 1-800-456-1134

October 17, 1989

LANDFILL MGMT



Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesey Road Watervliet, MI 49098

RE: Quotation #2837 and HEI Letter Dated October 6, 1989

Dear Jerry:

Per our discussion, I would like to summarize the items to be included in the wastewater treatment system we are providing to you.

Item A - Basic treatment system described in quote #2837, dated September 20, 1989.

Item B - Expansion to 20 GPM as described on page 5 of quote #2837.

Price . . . . . . . . . . . . \$10,235.00

Item C - 1,000 gallon transfer tank, as described in #1 in letter dated October 6, 1989.

Price . . . . . . . . . . . . . . \$ 1,358.00

Item D - Bulk transfer pump described in #2 in letter dated October 6, 1989.

Price . . . . . . . . . . . . . \$ 2,050.00

TOTAL PRICE . . . . . . . . . . . . . . . \$92,146.00\*

\*Quoted amount does not include any installation or federal, state and/or local sales tax that may be applicable.

(F.O.B. Grand Rapids, MI unless otherwise noted)

Prices are firm 60 days following quotation. NOTE:

**4** 009

Orchard Hill Landfill October 17, 1989 Quotation #2837 Page Two

**2**616 4637133

TERMS:

30% of the total amount is due with order.

60% of the total amount is due upon notification that

the equipment is ready to ship.

10% of the total amount is due at start-up or 60 days

after delivery, whichever comes first.

Delivery of the system is 10-12 weeks following receipt of the purchase order and approved drawings. Sales subject to prior credit approval and execution of a UCC-1 security agreement.

WARRANTY:

Equipment manufactured by the seller is warranted against defects in workmanship or materials for a period of 18 months from delivery or 12 months from date of start-up, whichever comes first. Equipment furnished by the seller, but manufactured by others is covered according to the warranties furnished by the manufacturer.

We sincerely appreciate this opportunity to provide you with this system.

Sincerezly,

George R. Babb

Regional Sales Manager Haviland Engineering, Inc.

GRB/cr



# ORCHARD HILL SANITARY LANDFILL

3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

October 25, 1989

Haviland Engineering Inc. 421 Ann Street N.W. Suite E, Grand Rapids, MI 49504-2075

Dear Sirs:

Enclosed is the down payment for the treatment system quoted on quote #2837 dated October 17, 1989.

If you have any questions please contact me at Orchard Hill.

#### ORCHARD HILL SANITARY LANDFILL

3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

October 7, 1989

Mr Bruce Merchant Kalamazoo Water Reclamation Plant 1414 N. Harrison Kalamazoo, Mi 49007-2565

**5**616 4637133

SUBJECT: Pre-Treatment of Orchard Hill Landfill Wastewater.

Dear Sir:

We are proceeding with the purchase of a package treatment plant from Haviland Engineering. This plant should allow us to meet all the requirements of your letter dated January 18, 1989.

I am enclosing a copy of the quotation from Haviland and a copy of our transmittal letter to them.

We are proceeding with our site preparation and the ordering of auxiliary equipment needed to put the plant into operation. As final shop drawings and plans become available I will inform you.

Thank you for your cooperation in this matter.



#### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

10: KA	L Tre	4 tmont		
ATTN:	Bruce	Mruchart		
FROM:	Jerry	M:1/24	· · · · · · · · · · · · · · · · · · ·	
FAX NUMBER	616	- 385-81	82	
NUMBER OF	PAGES FOLLOW	ING THIS COVER S	SHEET	<b></b> .
SENT BY	T/m	TIME 11.28	DATE NOV	7,1989

FAX NUMBER 615-463-7133

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

+ice

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.:

891459

Client No.: Project Date: 1059

Date Promised:

7/26/89 8/16/89

Date Reported: 8/16/89

Project Desc.: Analysis of one leachate sample.

Sample No.: 891459-01 Rec'd on: 7/26/89

Sample ID: Orchard Hills, Leachate, 7/26/89

COD 19,500 mg/L MDNR Scan 1 & 2 See attached Cyanide, total 0.09 mg/L Cadmium, total 0.01 mg/L Chromium, total 0.18 mg/L 0.09 mg/L Copper, total Lead, total 0.09 mg/L Mercury, total <0.0005 mg/L Nickel, total 0.68 mg/L Silver, total <0.005 mg/L Zinc, total 26.1 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

William H. Bouma/me

Director

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Sample No.: 891459-01 Date Received: 7/26/89 Date Promised: 8/16/89 Date Reported: 8/16/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills, Leachate, 7/26/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.6	Methylene chloride	150
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	5.9
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	17
1,2-Dichloroethane	100	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	82		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	28	m-and/or p-Xylene	260
Ethyl benzene	160	o-Xylene	83
Toluene	810	_	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

,

Attn: Mr. Don Batts

Project No.: 891253 Client No.: 1059 Project Date: 6/28/89

Date Promised: 7/19/89
Date Reported: 7/17/89

PO#:

Project Desc.: Analysis of one leachate sample

Sample No.: 891253-01 Rec'd on: 6/28/89

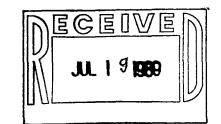
Sample ID: Orchard Hills, Leachate, 6/28/89

COD
MDNR Scan 1 & 2
Cyanide, total
Cadmium, total
Chromium, total
Copper, total
Lead, total
Mercury, total
Nickel, total
Silver, total

Zinc, total

22,500 mg/L See attached 0.05 mg/L

0.16 mg/L 0.11 mg/L 0.083 mg/L <0.0005 mg/L 0.82 mg/L <0.005 mg/L 1.81 mg/L



Unless otherwise noted, test results represent the sample(s) as they were received from client.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098 Date Received: 6/28/89
Date Promised: 7/19/89
Date Reported: 7/17/89

Sample No.: 891253-01

Attn: Mr. Don Batts

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills, Leachate, 6/28/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ИD	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ИD	trans-1,3-Dichloropropene	ND
Chlorobenzene	6.0	Methylene chloride	370
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	5.1
Chloromethane	ND	1,1,1-Trichloroethane	2.5
Dibromochloromethane	ND	1,1,2-Trichloroethane	2.0
1,1-Dichloroethane	40	Trichloroethene	15
1,2-Dichloroethane	190	Trichlorofluoromethane	ИD
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	160		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

_		2.4	
Benzene	27	m-and/or p-Xylene	200
Ethyl benzene	660	o-Xylene	90
Toluene	ND		

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10



March 1, 1994

Mr. Jerry Miller Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Dear Mr. Miller:

Enclosed please find an Individual Control Document that is being issued for your facility served by the Kalamazoo Water Reclamation Plant. This is the main document used by the City of Kalamazoo Department of Public Utilities to adequately control and regulate what is discharged to the sanitary sewer from the facility. The Individual Control Document replaces the Administrative Order previously issued. Please read this document and all referenced materials carefully and thoroughly. Compliance with this Individual Control Document is a necessary condition of receiving wastewater service. Also enclosed are copies of the City of Kalamazoo Sewer Use Ordinance and Sewer Use Regulations #1-89, #91-1, and #94-1. These documents detail additional specific discharge requirements and regulations (see especially Section 28-10 of the Ordinance for a list of prohibited discharges) and are referenced in the Individual Control Document.

Please feel free to call me at 337-8715 or talk with the Industrial Pretreatment Inspector for your facility if you have any questions regarding this matter.

Sincerely,

Kent Mottinger

Industrial Services Supervisor

Hent Mollinge

c:

R. Cinabro, COK

K. Collard, COK

file

DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo, Michigan 49007-2565 (616) 337-8157

FAX (616) 337-8699

# CITY OF KALAMAZOO WASTEWATER SERVICE

User Name: Address:

Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Date of Issue:

March 1, 1994

**Expiration Date:** 

March 31, 1999

### Individual Control Document

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#### **CITY OF KALAMAZOO** WASTEWATER SERVICE

#### **Individual Control Document** Part I: General

User Name: Address:

Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Phone:

616-463-5588 Mr. Jerry Miller

Contact:

In accordance with the provisions of Kalamazoo Code 28-1 et seq., Michigan Administrative Code R.323.2162 et seq. and 40 CFR Chapter 1, Subchapter N, Orchard Hill Landfill hereafter referred to as "User" which is synonymous with "Significant Industrial User" for the purpose of this document is authorized to discharge nondomestic wastewater from the above identified facility and through the outfalls identified herein into the wastewater system of the City of Kalamazoo in accordance with the terms and conditions set forth in this Individual Control Document.

#### A. <u>Discharge Standards</u>

Specific limits on applicable pollutants discharged to the sanitary sewer are presented in Part III.

#### B. Compliance Schedule

As required, areas of noncompliance or a time-frame to achieve compliance with new requirements, shall be resolved on the specified timetable included in Part IV.

#### C. Monitoring And Reporting

User shall install and maintain necessary monitoring systems and pretreatment equipment. User shall perform any required wastestream sampling and analyses. Additional requirements pertaining to monitoring and reporting of monitoring results are set forth in Part II and Part III.

#### D. Effective Date and Expiration Date

Kutt P. Cland

This Individual Control Document is effective as of April 1, 1994 and authorizes User's discharge, subject to the conditions set forth in Parts I, II, III, IV, and V herein, until midnight, March 31, 1999.

Kenneth P. Collard

**Director of Public Utilities** 

# CITY OF KALAMAZOO WASTEWATER SERVICE

## Individual Control Document Part II: Regulations and Requirements

User Name:

Orchard Hill Landfill

Address:

3378 Hennesy Road Watervliet, MI 49098

Phone: Contact:

616-463-5588 Mr. Jerry Miller

#### A. Effect of Individual Control Document

#### 1. Compliance with Applicable Law

This Individual Control Document does not relieve the User of its obligations under any local, state, or federal statutes, ordinances, rules, or regulations. Additional local requirements pertaining to wastewater discharge can be found in the City of Kalamazoo Code of Ordinances (Chapter 28), and in any associated Wastewater Use Regulations. User shall comply with all applicable federal, state, and local pretreatment laws, regulations, rules, ordinances, and other pretreatment requirements, including those that may become effective during the term of this Individual Control Document.

#### 2. Property Rights

This Individual Control Document does not convey any property rights of any sort, or any exclusive privilege, nor does it authorize any injury to persons or property, invasion of other private rights, or any infringement of federal, state or local laws, regulations, rules, ordinances, or other requirements.

#### 3. Non-transferability of Individual Control Document

This Individual Control Document applies only to the aforementioned identified User and shall not be transferred to another User. A copy of this Individual Control Document must be provided to any new owner/operator of the User's facility prior to the transfer of ownership and/or operator responsibility. User shall adequately document such action (i.e., by certified mail receipt or a signed statement by the owner/operator) and shall provide a copy of the notice or signed statement to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, within seven (7) days of such action.

#### B. Reapplication And Continuance

#### 1. Duty To Reapply

If User wishes to continue an activity authorized by this Individual Control Document after its expiration date, User must submit a renewal application at least ninety (90) days prior to the expiration date of this Individual Control Document (unless permission for a later submission date has been granted in writing by the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities).

#### 2. Continuation of Individual Control Document

Authorization to discharge under the terms and conditions of this Individual Control Document continues after the expiration date, subject to the conditions set forth herein, only if (a) User has submitted a timely and complete application for reissuance of an Individual Control Document and (b) the City of Kalamazoo, through no fault of User, has not yet provided the User a written determination as to whether an Individual Control Document will be reissued. Such authorization to discharge continues only until the date upon which the reapplication is reissued to User or the City of Kalamazoo provides User written notice that an Individual Control Document will not be reissued, whichever comes first.

#### C. <u>Inspection And Entry</u>

User shall allow authorized Kalamazoo Department of Public Utilities' staff members and their authorized agents and representatives to enter upon the User's premises where a regulated facility or activity is located or conducted, or where records are kept pertaining to such facility or activity 1) at all reasonable times whether or not discharge is occurring, and 2) at any time when there is a reason to believe a discharge or violation is occurring, for inspecting all operations and records, equipment (including monitoring and control equipment), copying records, and observing and sampling wastewater discharges or production processes.

#### D. Reporting And Approvals

#### 1. Anticipated Process Changes Notification

a. User shall provide written notification to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any anticipated process change which may substantially affect User's wastewater flow or quality. Process changes under this section are defined as major plant expansions or modifications which result in the discharge of (i) new pollutants, (ii) changed pollutants (e.g., BOD) such that the Kalamazoo treatment plant would be receiving a wastestream to which it is not acclimated, or (iii) the introduction of higher quantities or concentrations of existing pollutants. All process changes that could substantially increase User's flow or substantially affect User's

- wastewater quality (e.g., lower User's wastewater quality) must be approved by the Department of Public Utilities prior to implementation.
- b. The Department of Public Utilities may require the User to undertake a compatibility study to demonstrate to the satisfaction of the Department that the wastewater to be discharged is compatible with the existing Kalamazoo wastewater system, will not affect any requirements imposed upon the City (including sludge disposal requirements) and will not adversely affect the Kalamazoo wastewater system.

# 2. Notification Of Changes Impacting Discharge Limits Developed Under the Combined Wastestream Formula And Approval Of Changes (If Applicable)

- a. If User is subject to alternative discharge limits based upon the combined wastestream formula (40 CFR § 403.6(e)), User shall provide written notification to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, within five (5) business days after the User has a reasonable basis to believe that an anticipated plant operation change may result in a material or significant change in the values used in calculating alternative categorical discharge limits under the combined wastestream formula. Plant operation changes under this subsection include, but are not limited to, changes in production and changes in the flow of a regulated process wastestream, unregulated process wastestream or dilute wastestream.
- b. User shall provide the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, written notification of its intent to mix a regulated process wastestream prior to its treatment with wastewaters other than those generated by the regulated process. Such mixing of wastestreams must be approved by the Department of Public Utilities prior to implementation. These provisions do not apply to mixtures of regulated process wastestreams which have already been identified to the City of Kalamazoo and which are subject to an effluent limitation in Part III based upon the combined wastestream formula or a more stringent state or local limitation. (See also Part III, Section VIII pertaining to User derivation of alternative discharge limits.)

# 3. <u>Notification Of Changes Potentially Requiring Flow Weighted Averaging Discharge Limits</u>

User shall provide the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, at least thirty (30) days written notification of its intent to combine an unregulated process wastestream with a treated regulated process wastestream if monitoring for compliance with applicable categorical pretreatment standards occurs at a point downstream of where the wastestreams are combined. Such action may require modification of discharge limits in Part III based upon the flow-proportioning calculation or modification of sampling locations, as appropriate.

#### 4. Notification Of Changed Discharge (Non-Emergency Situation)

User shall provide written notification to the Industrial Services Supervisor, at the Department of Public Utilities within five (5) working days, of any substantial change in the volume or character of pollutants in its discharge, including changes in the listed or characteristic hazardous wastes for which the User has submitted a notification under 40 CFR § 403.12(p).

#### 5. Notification Of Production Changes (If Applicable)

Not Applicable

#### 6. Notification Of Potential Noncompliance

User shall provide written notification to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, of any planned changes in its activities which may result in noncompliance with the terms and conditions set forth herein.

#### 7. Notification Of Slug Discharges

User shall provide immediate notification by telephone to the Department of Public Utilities of any spills, slug loads, bypasses or upsets in pretreatment processes that affect discharge to the wastewater system, could cause problems to Kalamazoo's wastewater system or which otherwise could be reasonably expected to endanger health or the environment. User must monitor its processes and activities to assure prompt detection of any problems. A written report, explaining the event, and what steps are being taken to prevent future occurrences, must be submitted to the Industrial Services Supervisor within five (5) working days following the event.

#### 8. Notification Of Violations

If sampling performed by the User indicates a violation of any local, state or federal discharge limitations, the User must notify by telephone the City of Kalamazoo Department of Public Utilities within 24 hours of becoming aware of the violation.

### 9. <u>Baseline Monitoring Report, 90-Day Compliance Report And Other Federally</u> Mandated Reports

User shall comply with baseline monitoring report requirements, ninety-day compliance report, and other federally mandated reporting requirements as set forth in 40 CFR § 403 et seq.

#### 10. Duty To Provide Information

User shall furnish the City of Kalamazoo, within a reasonable time, any information which the City may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the Individual Control Document or to determine User pretreatment compliance. User shall also furnish to the City, upon request, copies of records required to be kept by the Individual Control Document.

#### 11. Other Information

Where the User becomes aware that it failed to submit any relevant facts in an application for an Individual Control Document, or submitted incorrect information in an application for an Individual Control Document, report to the City of Kalamazoo, or in any other correspondence pertaining to its nondomestic wastewater discharge, it shall promptly submit such facts or information.

#### 12. Telephone Numbers And Reporting Address

- a. Any notifications or reports required by this Individual Control Document regarding spills, slug discharges, or other emergencies to be communicated via telephone to the Public Utilities Department shall use the following telephone numbers:
  - (1) Telephone the Treatment Control Analyst (TCA) at 337-8680. If the TCA does not answer, leave a message on the recorder and proceed to Number 2.
  - (2) Dial the TCA's Pager Number, 671-1715. After you hear the three short beeps, promptly enter YOUR phone number then hang up. The TCA will return your call immediately.
- b. For non-emergency notifications or general telephone communications use 337-8157.
- c. Any written notifications or reports required by this Individual Control Document to be submitted to the Kalamazoo Public Utilities Department shall be submitted to the following address:

Industrial Services Supervisor City of Kalamazoo Public Utilities Department 1415 North Harrison Street Kalamazoo, Michigan 49007-2565

#### E. Signatory Requirements

All reports required under this Individual Control Document or otherwise submitted to the Kalamazoo Public Utilities Department pursuant to federal, state or local pretreatment requirements shall be signed by a representative of the User in accordance with 40 CFR § 403.12(1) and shall include the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

#### F. Record Retention

User is required to retain all records pertaining to its wastewater discharge for a minimum of three (3) years and shall make such reports available for inspection and copying by the City. This includes, but is not limited to, all records of monitoring activities and results (whether or not such monitoring activities are otherwise required by the Individual Control Document) including calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation; monitoring information identified in Part III; copies of reports required by the Individual Control Document; and records of all data used to complete the application for issuance or reissuance of this document. This period of retention is automatically extended during the course of any unresolved litigation regarding the discharge of pollutants or when requested in writing by the City of Kalamazoo at any time.

#### G. Public Availability Of User Information

At a minimum, the following User information received by the City of Kalamazoo shall be made available for public inspection by the Department of Public Utilities: (1) effluent data; (2) any data used to determine compliance with Chapter 28 of the Kalamazoo Code or the National Pollutant Discharge Elimination Permit issued to the City of Kalamazoo; and (3) other User information and data, to the extent provided by 40 CFR § 403.13(b) and (c).

#### H. Proper Operation And Maintenance

User shall at all times properly operate and maintain all pretreatment facilities and systems of treatment and control (and related appurtenances) which are installed or used by the User to achieve compliance with the terms and conditions of this Individual Control Document. This includes adequate laboratory controls and appropriate quality assurance procedures, the operation of back-up or auxiliary

facilities or similar systems which are installed by the User only when the operation is necessary to achieve compliance with the conditions of this Individual Control Document.

## I. <u>Termination Of Service and Modification, Revocation Or Termination Of Individual</u> Control Document

#### 1. Termination Of Service

The Department of Public Utilities can take immediate action to terminate service and/or halt discharges if the User's discharge poses a significant threat to the City's wastewater collection or treatment system, the environment, or human health or welfare.

#### 2. Modification, Revocation Or Termination Of Individual Control Document

- a. This Individual Control Document, or any part thereof, is subject to change, modification, revocation or reissuance at the sole discretion of the City of Kalamazoo.
- b. A request by the User for modification or revocation and reissuance does not stay any term or condition set forth herein pending a decision by the City of Kalamazoo upon such request.

#### J. Duty To Comply; Liability For Noncompliance

#### 1. Duty To Comply

User must comply with (a) all terms and conditions of this Individual Control Document and (b) applicable pretreatment requirements established under federal, state or local law whether or not those requirements are specifically set forth herein. These requirements include, but are not limited to, federal categorical pretreatment standards (40 CFR Chapter 1, Subchapter N); federal general prohibitions (40 CFR § 403.5(a)(1); federal specific prohibitions (40 CFR § 403.5(b), and local limits set forth in Chapter 28 of the Kalamazoo City Code of Ordinances. Any noncompliance constitutes a violation and is grounds for enforcement action, for Individual Control Document termination, revocation and reissuance, modification, or denial of a request for reissuance.

#### 2. Penalties For Noncompliance

Noncompliance with any terms or conditions of this Individual Control Document, any applicable statute, ordinance, regulation, rule, or other pretreatment requirement may subject the User to civil and/or criminal penalties. These penalties include, but are not limited to, a fine of \$25,000 per day for each violation under federal law (33 U.S.C. § 1319(d)) and the administrative assessment of up to \$500.00 per day per violation under local law (City of Kalamazoo Wastewater Use Regulation 1-89).

#### 3. <u>Damages</u>

In addition to any applicable civil or criminal penalty, User is liable for:

- a. All damage which its discharge does to the City of Kalamazoo's wastewater collection or treatment system if that damage is caused, in whole or in part, by the User's violation of this Individual Control Document or any applicable law, ordinance, regulation, rule, or pretreatment requirement.
- b. Any penalty imposed upon the City of Kalamazoo (whether by judicial or administrative order or the settlement of a judicial or administrative penalty action) where the violation of the City of Kalamazoo was caused by the User, either alone or in conjunction with discharge(s) from other source(s).
- c. Such other damages, e.g., lost revenues, as are authorized by law to be collected by the City of Kalamazoo.

#### 4. Public Notice Of Noncompliance

If User is determined by the City of Kalamazoo to be in significant noncompliance, as defined in 40 CFR § 403.8(f)(2)(vii), the City of Kalamazoo shall provide an annual public notification of such status in a local daily newspaper.

#### 5. Termination Of Individual Control Document

Compliance with this Individual Control Document is a necessary condition of receiving wastewater service. The City of Kalamazoo may terminate this Individual Control Document and wastewater service for, among other things, noncompliance with any of the terms or conditions set forth herein, or any requirements set forth in an applicable law, ordinance, regulation, or rule.

#### 6. Cessation Of User Discharge

Upon notice from Kalamazoo, User shall immediately cease any discharge of pollutants which reasonably appears to present an imminent endangerment to the health or welfare of persons, presents an endangerment to the environment or which threatens to interfere with the operation of the Kalamazoo wastewater system.

#### 7. Duty To Mitigate

User shall take all reasonable steps to minimize or prevent any discharge which has the reasonable likelihood of adversely affecting human health, the environment, or the Kalamazoo wastewater system.

#### 8. Need To Halt Or Reduce Activity Not A Defense

It shall not be a defense for the User in an enforcement action that it would have been necessary to halt or reduce the authorized activity in order to maintain compliance with the terms and conditions of this Individual Control Document, or any requirements set forth in an applicable law, ordinance, regulation or rule.

#### 9. Kalamazoo Reservation Of Rights

Nothing in this Individual Control Document shall be deemed to limit or otherwise waive the liability of User to the City of Kalamazoo under local, federal, or state law (including common law), for damages, injury, loss, or other liability resulting from User's discharge to the Kalamazoo wastewater system. Nor shall any provision in this Individual Control Document be deemed to limit the ability of the City of Kalamazoo to take action, as necessary, to enjoin or abate User's discharge.

### K. <u>Notification Of Responsibilities Under The Clean Water Act And Resource</u> Conservation Recovery Act

User is hereby notified of its legal responsibility to comply with applicable pretreatment standards (See 40 CFR Chapter I, Subchapter N), sections 204(b) and 405 of the Clean Water Act, and Subtitles C and D of the Resource Conservation and Recovery Act (See e.g., 40 CFR § 261 et seq.). This includes the duty to notify the City of Kalamazoo, the U.S. Environmental Protection Agency, and the State of Michigan pursuant to 40 CFR § 403.12(p) of any discharge into Kalamazoo's treatment plant which, if otherwise disposed of, would be a hazardous waste under 40 CFR § 261.

#### L. Spill Prevention

User shall install any equipment or devices necessary to prevent any spillage or leakage of process solutions or chemicals from entering the wastewater system. Additionally, the User shall store bulk chemicals and toxic wastes in such a manner to prevent any accidental discharge to the wastewater system in the event of a spill.

#### M. Slug Discharge Control Plan (If Applicable)

#### 1. Submission Of Draft Plan

Specified Date: Not Applicable

By date specified above, User shall submit a draft slug control plan to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities. Such plan, at a minimum, shall address the following elements:

a. Description of discharge practices, including non-routine batch discharges;

- b. Description of stored chemicals;
- c. Procedures for immediately notifying the Kalamazoo Department of Public Utilities of slug discharges, including any discharge that would violate a specific prohibition (see 40 CFR § 403.5(b)), with procedures for follow-up written notification within five (5) days;
- d. Procedures as necessary to prevent adverse impact from accidental spills, including inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents) and/or measures and equipment necessary for emergency response.

#### 2. Revision Of Draft Plan

User shall revise its draft slug control plan in accordance with comments received from the City of Kalamazoo within thirty days, unless a longer time period is provided in writing by Kalamazoo.

#### 3. Compliance With Approved Plan

User shall comply with the slug control plan as approved, including any changes set forth by the Kalamazoo Department of Public Utilities.

#### N. Authorized Kalamazoo Representatives

The City of Kalamazoo may act through its Department of Public Utilities or such other department or persons as the City in its sole discretion deems appropriate in responding to User's pretreatment obligations. These activities include, but are not limited to, termination of service, enforcement and inspection.

#### O. Severability

The provisions of this Individual Control Document are severable, and if any provision of this document or the application of any provision of this document to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this document, shall not be affected thereby.

# CITY OF KALAMAZOO WASTEWATER SERVICE

## Individual Control Document Part III: Discharge Limitations, Monitoring Locations And Reporting

User Name:

**Orchard Hill Landfill** 

Address:

3378 Hennesy Road

Watervliet, MI 49098

Phone: Contact:

616-463-5588 Mr. Jerry Miller

#### A. Local Discharge "End-Of-Pipe" Limitations

1. These limitations and sampling requirements apply to the discharge from your facility to the wastewater system at the designated monitoring location described in (2) below. Please refer to the City of Kalamazoo Code, Chapter 28, (or the applicable ordinance of the municipality where the facility is located) and Part III (C) below for prohibited discharge limitations.

<u>Pollutants</u>	<u>Daily Max.</u> <u>mg/L</u>	Minimum Sampling Frequency	<u>Sample</u> <u>Type</u>
Cadmium, T	0.040	Semi-annual	Grab
Chromium, T	4.67	Semi-annual	Grab
Copper, T	2.23	Semi-annual	Grab
Lead, T	0.110	Semi-annual	Grab
Nickel, T	1.59	Semi-annual	Grab
Zinc, T	5.30	Semi-annual	Grab
Cyanide, T	0.250	Semi-annual	Grab
Petroleum Hydrocarbon	100	Semi-annual	Grab
pН	6.2-9.8 S.U.	Semi-annual	Grab
Mercury, T	prohibited	Semi-annual	Grab
PCBs, T	prohibited	Annual	Grab
TCLP		Annual	Grab
MDNR Scans 1 & 2		Semi-annual	Grab

The detection limit shall not exceed 0.2 ug/L for PCB and 0.5 ug/L for mercury, unless higher levels are appropriate because of sample matrix interference:

No free products may be discharged at any time.

- \* Total of benzene, ethylbenzene, toluene, xylene.
- 2. The following location is a designated "end-of-pipe" monitoring location for the facility:

Code Monitoring Location Description

OHL Hauled waste prior to or during discharge at the Kalamazoo Water

Reclamation Plant.

#### B. Process-Specific Discharge "End-Of-Process" Limitations

Not applicable.

#### C. Discharge Prohibitions

User shall not cause interference or pass through; or discharge in violation of the specific prohibitions set forth in 40 CFR § 403.5(b) or the prohibited discharge requirements set forth in the City of Kalamazoo Code (or the applicable ordinance of the municipality where the facility is located).

#### D. <u>Discharge Points And Monitoring Facilities</u>

User may discharge nondomestic wastes into the Kalamazoo treatment system only at the sampling locations identified in Part III (A) and (B). Alternate discharge or sampling points may only be used upon written approval from the Industrial Services Supervisor at the City of Kalamazoo. User shall maintain monitoring locations and associated equipment. User shall also install equipment or implement other verifiable techniques to measure flow. User may be required, at the discretion of the City of Kalamazoo to install and maintain automatic sampling equipment.

#### E. Self-Monitoring And Reporting

#### 1. Frequency and Sampling Requirements

a. User shall perform the following sampling and analyses: An adequate number of samples shall be collected to ensure that the process discharge equipment is operating properly and that the wastewater

discharge does not violate limitations set forth in this Individual Control Document. At a minimum, samples shall be collected at least as frequently as specified in Part III (A) and (B) for all pollutants listed. For pollutants with a "grab" sample technique indicated, a minimum of four (4) grab samples must be used. All other samples must be 24 hour flow proportional composite samples where feasible. If flow proportional compositing is infeasible, samples may be obtained through time proportional composite sampling techniques.

- b. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Samples shall be taken on a day when the regulated pollutants are likely to be present in their maximum concentration, including monitoring of batch discharges should such discharges occur.
- c. All sampling and analyses shall be conducted according to EPA-approved methods set forth in 40 CFR § 136 or other validated procedures approved by the Director of Public Utilities.

#### 2. Reporting of Increased Monitoring Data

User may monitor more frequently than required by this Individual Control Document. If the User monitors any pollutant more frequently than required by this Individual Control Document using the procedures set forth in 40 CFR § 136, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the User's self-monitoring report.

#### 3. Repeat Sampling When Violation Indicated

If sampling performed by the User indicates a violation, the User shall:

- a. Notify the City of Kalamazoo within 24 hours of becoming aware of the violation.
- b. Repeat sampling and analyses for the pollutant(s) in violation.
- c. Submit the results of the repeated analyses to the Industrial Services Supervisor within 30 days after becoming aware of the violation.

More than one resample may be required to establish a return to compliance.

#### 4. <u>Self-Monitoring Reports</u>

Self-monitoring reports shall be submitted Semi-Annually. The first self-monitoring report shall be submitted by July 10, 1994 and shall contain information for January 1, 1994 through June 30, 1994. Reports for each period shall be due on the tenth of the month following the period. Reporting forms supplied by the City of Kalamazoo to the User, if applicable, shall be used and appropriately completed. At a minimum the reports shall contain:

- a. Average and maximum daily flows for the period.
- b. Results of all sampling performed by the User during the specified period.
- c. Certification Statement: I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

#### 5. Other User Specific Monitoring and Reporting Requirements

Not applicable.

#### F. Averaging Of Measurements

Calculations for limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this Individual Control Document or in the applicable federal, state or local pretreatment standards.

#### G. Dilution Prohibition

Except where expressly authorized to do so by an applicable pretreatment standard or requirement, User shall not increase the use of process water, or in any other way attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with a pretreatment standard or requirement.

#### H. Combined Wastestream Formula

1. <u>User To Derive Alternative Discharge Limits Using Combined Wastestream</u>
Formula

Where a regulated process wastestream is to be mixed prior to its treatment with wastewaters other than those generated by the regulated process, the User shall derive alternative discharge limits for each regulated pollutant in each process wastestream pursuant to the combined wastestream formula set forth in 40 CFR § 403.6(e). This requirement does not apply to mixtures of regulated process wastestreams which have already been identified by the User to the City of Kalamazoo.

2. Alternative limits derived by the User shall not apply to the User until approved or modified in writing by the City of Kalamazoo. User shall comply with the

discharge limits set forth in Part III (A) and (B) until the City of Kalamazoo modifies the limits or approves a modification request.

#### I. Record-Keeping

User shall maintain records of monitoring of wastewater at its (1) end of pipe, (2) end of process, and (3) any other internal wastestream monitoring regardless if the User is otherwise required by this Individual Control Document to monitor its wastewater at such locations, frequencies, or pollutant parameters. Records shall include:

- 1. The dates, exact location, method and time of sampling or measurements and the individual(s) who performed the sampling or measurements;
- The date(s) analyses were performed, the analytical techniques or methods used, the individual(s) who performed the analyses, and the results of such analyses.

# CITY OF KALAMAZOO WASTEWATER SERVICE

Individual Control Document
Part IV: Compliance Schedule

User Name: Address:

Orchard Hill Landfill 3378 Hennesy Road Watervliet, MI 49098

Phone: Contact:

616-463-5588 Mr. Jerry Miller

#### A. Action Required

Not applicable.

ANY PERMITS OR APPROVALS WHICH MUST BE OBTAINED FROM OTHER GOVERNMENTAL AGENCIES ARE THE RESPONSIBILITY OF THE USER. The City of Kalamazoo does not by its approval of any of the designs or installation of the plants and equipment, warrant or aver in any manner that User's implementation of such measures will result in compliance with User's pretreatment requirements. Notwithstanding any approval of such plans by the City of Kalamazoo, User remains solely responsible for compliance with the terms of this Individual Control Document and federal, state and local requirements.

#### B. Reporting

Reports of compliance or noncompliance with, or any progress reports on requirements set forth in Part IV Section I, above, shall be submitted to the City of Kalamazoo no later than 14 days following each schedule date. Reports shall, at a minimum, identify whether the User has complied with the increment of progress to be met on such date and, if not, the date on which it expects to comply with this increment of progress, the reason for delay, and the steps being taken by the User to return to the established schedule. (40 CFR § 403.12(c))

#### C. Effect Of Compliance Schedule

#### Inclusion Of Compliance Schedule Discretionary

The City of Kalamazoo may amend this Individual Control Document, at its discretion, to include a compliance schedule to address any instances of

noncompliance with a federal, state or local pretreatment requirement, including noncompliance with the terms and conditions set forth in this Individual Control Document. A compliance schedule may also be included to set forth reasonably expeditious milestones for complying with new federal, state or local requirements.

#### 2. Compliance With Schedule Milestones Not A Defense (If Applicable)

Compliance with the milestones set forth in Part IV, Section I, above, does not absolve the User from its legal obligations to comply with the requirements as otherwise set forth in this Individual Control Document or any applicable federal, state or local law, regulation, rule, ordinance or pretreatment requirement. Accordingly, it shall not be a defense to an enforcement action that the User complied with the milestones set forth above.

#### 3. Compliance With Federal Categorical Standards

Compliance by existing sources with federal categorical pretreatment standards shall be within three (3) years of the date the standard is effective unless a shorter compliance time is specified in the applicable subpart of 40 CFR Chapter I, Subchapter N. New sources shall meet all applicable pretreatment standards within the shortest feasible time not to exceed ninety (90) days. At a minimum, User shall submit to the Industrial Services Supervisor, at the Kalamazoo Department of Public Utilities, semi-annual notices (on the first day of the months of April and October) identifying specific actions taken to comply with such standards.

# CITY OF KALAMAZOO WASTEWATER SERVICE

Individual Control Document
Part V: Definitions

User Name: Address:

Orchard Hill Landfill 3378 Hennesy Road

Watervliet, MI 49098

Phone: Contact:

616-463-5588 Mr. Jerry Miller

Except as provided below, terms set forth herein shall be defined as set forth in Kalamazoo Code § 28-1 or Wastewater Use Regulations. If a term is not defined below or in the Kalamazoo Code or Wastewater Use Regulations, then it shall be defined as set forth in corresponding federal regulations. (See, e.g., 40 CFR § 403.3.)

- A. <u>Daily Maximum</u>: The maximum allowable discharge of a pollutant during a calendar day. Where daily maximum discharge limits are expressed in units of mass, the daily discharge is the total mass discharges over the course of the day. Where daily maximum limitations are expressed in terms of concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that day.
- B. <u>Domestic Waste</u>: Human waste and other waste related to personal or residential sanitation including hauled septage waste.
- C. Flow Proportional Composite Sample: A sampling method which combines discrete aliquots of a sample collected over time, based on the flow of the wastestream being sampled. The aliquots collected shall be at constant time intervals with the volume of each aliquot varying based upon the stream flow. Flow proportional samples can also be a combination of constant volume samples collected at time intervals which vary based on the stream flow.
- D. <u>Grab Sample</u>: A sample which is taken on a one-time basis with no regard to the flow of the wastestream and without consideration of time.
- E. <u>Monthly Average</u>: The sum of the concentrations of the individual samples divided by the number of samples taken during a calendar month. If the pollutant concentration in any sample is less than the detection limit, a value of zero is used in calculating the monthly average concentration.

- F. <u>Non-Domestic Wastewater</u>: Wastewater that contains nondomestic waste including contaminated groundwater and leachate.
- G. Regulated Process Wastestream: An industrial process wastestream regulated by a national categorical pretreatment standard. Such determination may be pollutant specific a wastestream from a process may be "regulated" for one pollutant and "unregulated" for another.
- H. <u>Time Proportional Composite Sample</u>: A sampling method which combines discrete sample aliquots of constant volume collected at constant time intervals.
- I. <u>Unregulated Process Wastestream</u>: An industrial process wastestream that is not regulated by a national categorical pretreatment standard. Such determination may be pollutant specific a wastestream from a process may be "regulated" for one pollutant and "unregulated" for another.

#### INDIVIDUAL CONTROL DOCUMENT - RECEIPT

effective April	1, 1994, e copies of tl	Control Docum is acknowledge he City of Kalam and #94-1.	ed. Delivere	d with the li	ndividual	Contro
Received by: <u>∠</u>	Eflo.	Bellem	Date	: <u>3-10-</u>	94,	1994
Delivered by:_	Stevens	4. Rochon	Date	e:_ <i>3~ 0-</i>	94	, 1994

### WORKSHEET FOR ISSUING NEW ICDs

User Name: Orchard Hill Landfill	SiteName:
Address: 3378 Hennesy Road	Address:
Wateruliet, Michigan	
City/St/Zip_49098	City/St/Zip
Phone: (616) 4163 - 5588	Phone:
Contact: Mr. Jerry Miller	Contact:
Effective Date of ICD:April 1, 1994	<del></del>
Issue Date of ICD:March 25, 1994	<del></del>
Expiration Date of ICD:March 31, 199	9
(23) Notification of Production Changes if A	applicable: (blank pg. 6)
_X_ Not Applicable	
this Individual Control Documer Kalamazoo within two (2) busir basis to know that the product the next calendar month. A sign	lculate equivalent mass per day limits in nt is (RATE). User shall notify the City of ness days after the User has a reasonable tion level will significantly change within nificant change is an increase or decrease NUMBER =
(24) Slug Discharge Control Plan (if Applica	
Not ApplicableCurrer	nt plan on file.
Specified Date:	·
(12) Reporting frequency: <a>semi-annua</a>	lly quarterly
(25) First report due:	(if different than July 10, 1994)
(26,27) Covers period	through 34 - June 30, 1994)

Sampling requir	ements:	
∡nd of Pipe:		
ID: OHL	Sample Location: Hauld Waste sampled.	

<u>Pollutants</u>	<u>Daily Max.</u> <u>mg/L</u>	Minimum Sampling Frequency	Sample Type
Cadmium, T	0.040	S_ <u>A</u>	Composite
Chromium, T	4.67	5 <u>.4</u>	Composite
Copper, T	2.23	<u> </u>	Composite
Lead, T	0.110	<u>5</u> A \	Composite
Nickel, T	1.59	<u>5A</u>	Composite
Zinc, T	5.30	<u>SA</u>	Composite
Cyanide, T	0.250	<u>54</u>	Grab
Petroleum Hydrocarbon	100	<u>3,4</u>	Grab
рН	6.2-9.8 S.U.	SA	Grab
Mercury, T	prohibited	<u> </u>	Composite
PCBs, T	prohibited	annually	Composite
TCLP		annually	
MDNR Scan 1 2		5A	

\_\_\_\_ No free products may be discharged at any time.

<sup>\*</sup> Total of benzene, ethylbenzene, toluene, xylene.

End of Process:  ID:	Sample Location: NA				
40 CFR reference	<b>:</b> :	Name of category:			

Indicate appropriate limits or change if different:

Pollutant	Local Limits  Daily  Maximum  Concentrati  on Limit  (mg/L)	Metal Finishers- PSES Maximum Concentrations (mg/L)		Metal Finishers- PSNS Maximum Concentrations (mg/L)		
		Daily	Monthly Avg.	Daily	Monthly Avg.	Sample Type
Cadmium, T	. 0.040	0.69	0.26	0.11	0.07	composite
Chromium, T	4.67	2.77	1.71	2.77	1.71	composite
Copper, T	2.23	3.38	2.07	3.38	2.07	composite
Lead, T	0.110	0.69	0.43	0.69	0.43	composite
Nickel, T	1.59	3.98	2.38	3.98	2.38	composite
Zinc, T	5.30	2.61	1.48	2.61	1.48	composite
Cyanide, T	0.250	1.20	0.65	1.20	0.65	grab
Silver, T		0.43	0.24	0.43	0.24	composite
TTO		2.13	; ; ;	2.13	; ; ;	

Note: The most stringent limit is enforced.

SELF-MONITORING PARAMETER WORKSHEET

IU Name: Orchard H. | Landfill Sample Code: 0HL

Analysis	Hist	Proc	Store	Treat	Cat	Other	Require
Cadmium, T	1/15	NO	No	Yes			\ \
Chromium, T	0/15	No	No	Yes			Υ,
Copper, T	0/15	NO	No	Ves			Y
Lead, T	2/15	No	No	Yes.			Y
Nickel, T	1/15	NO	No	Ye5			Y
Zinc, T	1/15	No	No	Yes		ļ	Y
Mercury, T	2/15	No	No	Yes			V
Silver, T	-	No	No	Y-25			
Arsenic, T		No	No	Yes			-
Selenium, T		No	No	Yes			_
Cyanide, T	2/15	No	No	No			Y
Oil & Grease	2/4	No	No	No	: 		Y
pH (violations)	0/8	No	Yes	No			Y
MDNR Scan 1		405	No	Yes			Y
MDNR Scan 2		Yes.	No	Ye 5			Ý
PCB, T annual	0/1	NO	No	No			Y
TCLP annual						<u> </u>	I Y

Completed by: Kochow	Date: 1/24/93Approved by:	KM	Date: //3/	15.
completed by ./ perior	Date		Dace. // 3/	

#### Directions:

Hist - Show times exceeded 50% of limit in last 3 years (example: 2/9).

Proc - Is pollutant present in the process? (Y or N).

Store - Is pollutant stored on site? (Y or N).

Treat - Does IU pretreat to remove pollutant? (Y or N). Cat - Is this location subject to categorical limits? (Y or N).

Other - Is there another reason to monitor pollutant? Attach explanation. Add parameters, especially categorical, that should be considered.

# INDIVIDUAL CONTROL DOCUMENT - RECEIPT

Delivery of the Individual Control Document for effective April 1, 1994, is acknowledged. Document were copies of the City of Kalamazoo Regulations #1-89, #91-1, and #94-1.	Delivered v	with the Inc	dividual Contro
Received by: God Nederuled	_ Date:	3/10/	, 1994
Delivered by: John Ward	Date:_	3-10	<sup>)</sup> , 1994

CITY OF KALAMAZOO CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM DEPARTMENT OF PUBLIC LITHLITIES. SAMPLERS: PURPOSE OF ANALYSIS: 1415 N Harrison **13926** (Signature) Kalamazoo, Michigan 49007 616-337-8157 DATE/TIME D С G ITEM SAMPLE LOCATION, DESCRIPTION SAMPLE **NUMBER & SIZE** Õ R Α SAMPLE I.D. NUMBER NUMBER OF CONTAINER M & REMARKS orchard Itill SMR 12995-B Final Eff. Metals 9:30 4 Brown. One-12 TANK ΒΥ: 8₹: RECEIVED E DATE/TIME DATE/TIME 3 | RELINQUISHED E | (Signature) A RELINQUISHED E (Signature) DATE/TIME GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT **BATCH ACH** ug/L <10 рΗ CADMIUM EPA METHOD 601 BOD TOTAL CHROMIUM 40 CBOD HEX. CHROME <40 COD COPPER 15.2 TSS LEAD 286 VSS **NICKEL** 470 NH<sub>2</sub>-N ZINC **EPA METHOD 602** DATE/TIME <10 TOTAL P SILVER < 0.2 ORTHO P MERCURY GREASE/OIL BERYLLIUM CHLORIDE BARIUM REMARKS 105 CN - TOTAL 22-Jun-95 OTHER CN - AMENABLE

CITY OF KALAMAZOO CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM DEPARTMENT OF PUBLIC UTILITIES SAMPLERS: (Signature) PURPOSE OF ANALYSIS: No 13925 1415 N Harrison Kalamazoo, Michigan 49007 616-337-8157 DATE/TIME DATE/TIME С G ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION Α 0 R SAMPLE I.D. NUMBER NUMBER **OF CONTAINER** М & REMARKS Ε Raw Wastel Brown orchard Hill SMR One-1L LANdfill 12995-A 8₹: ΒΥ. RECEIVED (Signature) RECEIVED E DATE/TIME DATE/TIME 쯧. ₽. 3 RELINQUISHED E Signature) 4 RELINQUISHED ( (Signature) AM DATE/TIME GENERAL/CONVENTIONAL RESULT TRACE METALS RESULT ORGANIC COMPOUNDS RESULT **BATCH ACH** ug/L <10 CADMIUM **EPA METHOD 601** pН 104 BOD **TOTAL CHROMIUM** CBOD HEX. CHROME RECEIVED BY: (Signature) <40 COPPER RECEIVED (Signature) COD 20.2 TSS LEAD 261 VSS NICKEL 5/4/ 11:20 3226 NH<sub>z</sub>-N ZINC **EPA METHOD 602** DATE/TIME <10 TOTAL P SILVER < 0.2

96

OTHER

22-Jun-95

₽.

2 RELINQUISHED I (Signature)

₩.

ELINQUISHED Signature)

REMARKS:

MERCURY

BERYLLIUM

Arsenic

BARIUM

ORTHO P

GREASE/OIL

CHLORIDE

CN - TOTAL

CN - AMENABLE

# CITY OF KALAMAZOO CAL REPORT# 12718

SAMPLE RECEIVED 04/15/91

PAGE 1

LAB# 1040966 ORCHARD HILL LANDFILL OHL 093

ANALYTICAL RESULTS mg/l

Cyanide, Total

0.50 = 500 ppb (w)

Please place these results with OHL 093. These are CN results used to confirm the high CN results obtained in the

TW.

There is still some question about
there is still some question about
these isselfs Two initially felt then
thus some interference, with I don't
mus some interference, with I don't
know how reliable (AL Lubs are in this
know how reliable (AL Lubs are in this
know how won't use this data.

(ase. We won't use this data.

QA/QC COMP ILA Н IONS

											4-17	DATE
											Cyanide	PARAMETER
											< 0.02	BLANK
											0.10	TRUE HOD
											0.10	CONC. OBSERVED  7 of
											100	% of TRUE
											4-966	SAMPLE #
											H <sub>2</sub> 0	MATRIX
											mg/1	UNITS
											1/50	DILUTION FACTOR
											0.01	TRIAL #1
											0.01	-DUPLICATION-
											0.01	MEAN :
					-						0.05	FINAL SPIKE CONC.
											.06	OBSERVED HE CONC. OF HE SPIKED SAMPLE *
				٠								% of SPIKE RECOVERED
											AB	ANALYST'S

\*% of SPIKE RECOVERED = [(OBSERVED CONC. of SPIKED SAMPLE - MEAN)/(FINAL SPIKE CONC.)] X 100%

Canton Analytical Laboratory, Inc. (313) 483-7430 FAX (313) 545-1541

# SAMPLING RESULTS FROM OF " RD HILL LANDFILL FROM 4/1 "

				Sample		Comple
parameter	VALUE		Units	Deate-	Scample Sylves	Time
LEAD	24 000	•		04/03/91	GRAE	11:45 AM
Mean	24.000					
parameter	VALUE	~	Units	Sample Date		
MERCURY	0.000	Х.		04/03/91	GRAB	11:45 AM
Meen	0.000					
parameter	VALUE	• •	Urnits	Sample Date	Sample Type	Sample Time
NICKEL	498.000		ug/l		GRAF	11:45 AH
Mearı	498.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	11.000		mg/l	04/03/91	GRAB	11:45 AM
Mearı	11.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
parameter SILVER	VALUE 0.000	*	Units ug/l		Sample Type	
		 *		Date	haden marker manys . I was to a favour many ways ways was	Time
SILVER Mean parameter	Ø. 000 Ø. 000 VALUE	*	ug/l Units	Date 04/03/91 Sample Date	CRAB Sample Type	Time . 11:45 AM Sample Time
SILVER	0.000 0.000 VALUE 330.000	*	ug/l Units	Date 04/03/91 Sample Date	CRAB Sample Type	Time . 11:45 AM Sample Time
SILVER Mean parameter	0.000 0.000 VALUE	*	ug/l Units	Date 04/03/91 Sample Date	CRAB Sample Type	Time
SILVER Mean  parameter  TOLUENE  Mean  parametor	0.000 0.000 VALUE 330.000 VALUE		ug/l Units ug/l	Date  04/03/91  Sample Date  04/03/91  Sample	CRAB Sample Type GRAD Sample Type	Time 11:45 AM Sample Time 11:45 AM
SILVER Mean  parameter  TOLUENE  Mean	0.000 0.000 VALUE 330.000 VALUE 2.280		ug/l Units ug/l	Date  Sample Date  04/03/91  Sample Date	Sample Type GRAD Sample Type	Time 11:45 AM Sample Time 11:45 AM
SILVER Mean  parameter  TOLUENE  Mean  parametor	0.000 0.000 VALUE 330.000 VALUE		ug/l Units ug/l	Date  Sample Date  04/03/91  Sample Date	Sample Type GRAD Sample Type	Time 11:45 AM Sample Time 11:45 AM
SILVER Mean  parameter  TOLUENE  Mean  parameter  TOTAL PHOS  Mean	0.000  VALUE  330.000  VALUE  2.280  2.280		Units ug/l Units mg/l	Date  Sample Date  04/03/91  Sample Date  04/03/91  Sample Date  Date	Sample Type GRAD Sample Type GRAD Sample Type GRAD	Time J1:45 AM  Sample Time J1:45 AM  Comple Find J1:45 AM
SILVER Mean  parameter  TOLUENE  Mean  parameter  TOTAL PHOS  Mean  perameter	0.000 VALUE 330.000 VALUE 2.280 VALUE		ug/l Units ug/l Units mg/l	Date  04/03/91  Sample Date  04/03/91  Sample Date  04/03/91	Sample Type GRAD Sample Type GRAD	Time J1:45 AM Sample Time J1:45 AM Sample Time J1:45 AM

indicates test results below defection limits.

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TI STUDSEN INC. RESULTS II.	. U littel	الله الله	17 3(36) 1	1011		

# SAMPLING RESULTS FROM OF RD HILL LANDFILL FROM 4/2000

	• .			1		
parameter	VALUE	\$40	Units		Sample Type	Sample Time
BENZENE	49.000	*		04/03/91	GRAB	
Mean	49.000					
parameter	VALUE	***	Units		Sample Type	Sample Time
CADMIUM	0.500	***	ug/l	04/03/91	GRAB	
Mean	0.500					
parameter	VALUE	****	Units	Sample Date	Sample Type	Sample Time
CBOD 5-DAY	5600.000	****		04/03/91	GRAB	11:45 AM
Mean	5600.000					
parameter	VALUE	****	Units	Sample Date	Sample Type	Sample Time
CHROMIUM	45.000			04/03/91	GRAB	11:45 AM
Mean	45.000					
parameter	VALUE	weden	Units	Sample Date	Sample Type	Sample Time
CIS-1,2-DICHLOROETHE	100.000			04/03/91	GRAB	11:45 AM
Mean	100.000					
parameter	VALUE	'unan'	Units	Sample Date	Sample Type	Sample Time
COD	9081.000	****	wa/j	04/03/91	GRAB	11:45 AM
Mean	9081.000			•		
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
COPPER	48.000		ug/l	04/03/91	GRAB	11:45 AM
Mean	48.000					
parameter	VALUE	years was	Units	Sample Oate	Sample Type	Sample Time
ETHYLBENZENE	54,000		ug/l	04/03/91	GRAB	11-45 AM
Mean	54.000					

indicates test results below detection limits

Chloroethane

### LAB# 1040385 ORCHARD HILL LANDFILL OHL 09391

	ANALYTICAL RESULTS ug/l
DNR SCAN 1, PURG. HALOCARBON	
Chloroform	< 2.0
Bromodichloromethane	< 4.0
Dibromochloromethane	< 4.0
Bromoform	< 5.0
Methylene Chloride	< 2.0
1,1-Dichloroethene	< 1.0
1,1-Dichloroethane	< 1.0
trans-1,2-Dichloroethene	< 1.0
1,2-Dichloroethane	< 1.0
1,1,1-Trichloroethane	< 1.0
Carbon Tetrachloride	< 4.0
1,1-Dichloropropene	< 1.0
trans-1,3-Dichloropropene	< 1.0
Trichloroethene	11
cis-1,3-Dichloropropene	< 1.0
1,1,2-Trichloroethane	< 1.0
1,1,2,2-Tetrachloroethane	< 1.0
Tetrachloroethene	< 1.0
Chlorobenzene	< 1.0
cis-1,2-Dichloroethene	100
Bromomethane	< 4.0
Chloroothono	< 1.0

< 1.0

# CITY OF KALAMAZOO CAL REPORT# 12573

SAMPLE RECEIVED 04/05/91

PAGE 2

LAB# 1040385 ORCH	HARD HILL LANDFILI	OHL 09391
	ANAI RESU ug/l	YTICAL ULTS
Trichlorofluorometh	nane < 4.	0
Vinyl Chloride	< 5.	0
DNR SCAN 2, PURG.	AROMATICS	-
Benzene	49	
Ethylbenzene	54	
Toluene	330	
Xylenes	210	

CITY OF KAI		CH	AIN	OF CUSTOD	Y REC	OR	DA	ND	LAB	<b>ANALYSIS</b>	REPORT FORM	•	•
DEPARTMEN 1415 N. Harrison	IT OF PUBLIC UTILITI	SAN	IPLERS:							F ANALYSIS:		No	7426
Kalamazoo, Mich 616-385-8157		(Sigi	nature)	Tal Long	0				nno	liance A	Ponitoting	101	
		044515	1	1	D	1	r	С	G			SIME SIZE	ME
ITEM NUMBER	SAMPLE I.D.	SAMPLE NUMBER	٦ (	NUMBER & SIZE POPER OF CONTAINER	A T E	N E	  /  =	O M P	R A B	SAMPLE LOC &	ATION, DESCRIPTION REMARKS	A LEVI	DATE/TIME
	orchard Hill Landfill	0HL 0939	12	- 40ml.	4/3/91	11:4	15 AM		H		/Voc's	3	
											·		9 BY:
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												Source)	laurs ture)
												BELIN (Signar	4 RELINQUISHED (Signature)
GENERAL/C	ONVENTIONAL	RESULT	TRACE	E METALS	RES	ULT	ORGA	ANIC	СОМРС	OUNDS RESULT		3:57     9:07	DATE/TIME
рН			1	CADMIUM				EPA MI	ETHOD 6	01		SS/	3 9/2/A
BOD			1	FOTAL CHROMIUM									
CBOD			+	HEX. CHROME								£ 3	A
COD			(	COPPER				~				19 (E) 18	ED E
TSS			l	LEAD								(Signature)	RECEIVED (Signature)
vss				NICKEL						· · · · · · · · · · · · · · · · · · ·			
NH <sub>3</sub> -N			Z	ZINC					ETHOD 6			3:57 PM	3:57 Pr
TOTAL F	·		5	SILVER				DNA	<u>? Sc</u>	AN 142		E 80 0	ATE/TH
ORTHO	P		1	MERCURY		}				···		DATE!	TA NO
GREASE	/OIL		E	BERYLLIUM						····		ä V	
CHLORI			E	BARIUM							REMARKS:	ED B	ED BY:
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CN - AM	ENABLE							OTHER	₹ —		REN	Signature)	ELINGUI ignature)
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# KALAMAZOO WATER RECLAMATION PLANT INDUSTRIAL PRETREATMENT SAMPLES D.O. & B.O.D.

			)HC	· 3	母 C	193			CB.	OD
Test Date	Sample Source	ML.	Bott. No.	I.D O. mg/L (B)	F.D.O.5 mg/L (C)	D.O. Depletion (B-C = D)	Dilution Factor (300 – A = E)	B.O.D. mg/L (D × E)	Avg. B.O D. mg/L	Remarks
4/4	Blank (Seeded)	0	7	86	5,2	0.4	/	0.4	0-4	
		3	17	8.6	58	2.8	100	5600	5600	Due Date ( - 9 - 9 /
	20:1 Dilution	10	4	8-6	0.12	8.48				Sample Date   (
		30	189	8.6	0	8.6		_		Test Date (/- 4-9/
		75		82	0	85				5 RTS/ 5K
				A	1-	944				
Test Date	Sample Source	ML.	Bott. No.							Remarks
Duit	Blank (Seeded)	0					<del></del>			
		3							-	Due Date
	20:1 Dilution	10								Sample Date
		30								Test Date
		75								
<u></u>			<u> </u>	Ster	001	5		<del></del>		
Test Date	Sample Source	ML.	Bott. No.							Remarks
	Blank (Seeded)	0								
		3		-						Due Date
	20:1 Dilution	10			,					Sample Date
		30					-			Test Date
		75								
Test Date	Sample Source	ML.	Bott. No.							Remarks
Date	Blank (Seeded)	0	140.							
	· · · · · · · · · · · · · · · · · · ·	3								Due Date
	20:1 Dilution	10								Sample Date
		30								Test Date
		75								

SAMPLE	E ID	Of	+ 4	43	3				
DISH	D.F.	PO	5	зТ	5				
WT.DIS	SH&SOL.	248	50k	252	880				Analyst
WT.DIS	SH	a48	365	<b>a</b> 53	768				Date Analyzed 4/4/6
MG/L S	POL	705	141	56	0	63	2 V		
WT.DIS	SH&SOL.	2489	506	252	88 <i>D</i>			 	
WT.DIS	SH&ASH	248	471	252	856				
MG/L V	OL.SOL.	175	35	120	24	14'		<u></u>	

SAMPLI	OF	160	394		1	V	7		
DISH	D.F.	CH		swi					
WT.DIS	SH&SOL.								Analyst
WT.DIS	SH	245-	749 250723		1723				Date Analyzed
MG/L 8	SOL						7		- Date Analyzeu
WT.DI	SH&SOL.								
WT.DI	SH&ASH								
MG/L V	VOL.SOL.						7		

SAMPLE	ID I	OH	4/	299	5	N/	5		
DISH	D.F.	nΑ		SPY					
WT.DIS	SH&SOL.								Analyst
WT.DIS	SH	2 39	215	235	809				Date Analyzed
MG/L'S	SOL							L	butto mid1y2ed
WT.DIS	SH&SOL.								
WT.DIS	SH&ASH								
MG/L	VOL.SOL.				T				

CITY OF KALAMAZOO CAL REPORT# 12654

SAMPLE RECEIVED 04/10/91 PAGE 12 LAB# 1040702 OHL 09391 ANALYTICAL RESULTS mg/l110 V

Oil & Grease



#### DEPARTMENT OF PUBLIC UTILITIES

Water Reclamation 1415 N. Harrison Kalamazoo Michigan 49007-2565 (616) 385-8157

April 20, 1990

Mr. Jerry Miller Orchard Hills Landfill 3378 Hennessey Road Watervliet, MI 49098

RE: Recent Analytical Data

Dear Mr. Miller:

Enclosed please find a copy of recent analytical data obtained from samples collected during the site inspection at your facility on March 5, 1990 and from some subsequent sampling collected when the waste loads were discharged here at the Water Reclamation Plant.

Please note that two (2) parameters of concern have been highlighted and, after comparison with the local discharge limitations, show exceedances of these limitations. There does exist some questions surrounding the results for total cyanide due to interferences encountered during the actual analysis. Further investigation will need to be done regarding ways to reduce, eliminate or account for these interferences. The oil and grease results do indicate a .. potential problem with your discharge and will also need to be addressed.

Mr. Terry Miller April 20, 1990 Page 2 of 2

Consequently, please collect one (1) grab sample each for total cyanide, oil & grease and MBAS (methylene blue-activated substances). These samples need to analyzed at an approved contract laboratory (please refer to the attached list) and the results submitted to this office within 30 days.

Thank you for your cooperation in this matter and please call me at (616) 385-8157 if you have any questions regarding this letter.

Sincerely,

Bruce E. Merchant

Industrial Services Supervisor

BEM:ped\disch\_lett\orch

encls

c Tim Meulenberg Rohel Amundson Dan Starkey

File

· parsmeter	VALUE	•••	Units	Sample Date	Sample Type	Sample Time
. 1,1-DICHLOROETHANE	14.000	•	ug/1	03/05/90	GRAB	02:25 PM
Mean	14.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
1,2-DICHLOROETHANE	140.000	-	ug/1	03/05/90	GRAB	02:25 PM
Mean	140.000					
parameter	VALUE		Units		Sample Type	Sample Time
AMMONIA-NITROGEN	466.000	-	mg/l	03/05/90	GRAB	02:25 PM
Mean	466.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
BENZENE	43.000		ug/l	03/05/90	GRAB	02:25 PM
Mean	43.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
ВОР	1560.000		mg/l	03/05/90	GRAB	02:25 PM
Mean	1560.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
CADMIUM	1.000	-		03/05/90	GRAB	02:25 PM
Mean	1.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
CHROMIUM	28.000	_		03/05/90	GRAB	Ø2:25 PM
riean	28.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
CIS-1,2-DICHLOROETHE	250.000	••••		03/05/90	GRAB	02:25 PM
Mean	250.000					

<sup>\*</sup> indicates test results below detection limits

parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
COD	10496.000		mg/l	03/05/90	GRAB	02:25 PM
• Mean	10496.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
COPPER	41.000				GRAB	02:25 PM
Mean	41.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
CYANIDES	'276.000 ( 165.000	;	ug/l	03/05/90 04/02/90	GRAB GRAB	02:25 PM 10:45 AM
Mean	220.500					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
ETHYLBENZENE	130.000			03/05/90	GRAB	02:25 PM
Mean	130.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
LEAD	34.000	•••	ug/l	03/05/90	GRAB	02:25 PM
Mean	34.000					
parameter	VALUE	•••	Units		Sample Type	Sample Time
MERCURY	0.000	*			GRAB	02:25 PM
Mean	0.000					
parameter	VALUE				Sample Type	Sample Time
METHYLENE CHLORIDE	240.000		ug/l		GRAB	Ø2:25 PM
Mean	240.000					
parameter	VALUE				Sample Type	Sample Time
NICKEL			ug/l		GRAB	02:25 PM
Mean	286.000					

<sup>\*</sup> indicates test results below detection limits

- parameter	VALUE			Sample Date	Sample Type	Sample Time
OIL & GREASE	195.000, 2356.000, 412.000, 408.000,		mg/l mg/l mg/l mg/l	03/05/90 03/27/90	GRAB GRAB GRAB GRAB	02:25 PM 10:30 AM 10:20 AM 10:45 AM
Mean	342.750					
parameter	VALUE	-			Sample Type	Sample Time
SILVER		_	ug/l		GRAB	02:25 PM
Mean	0.800					
parameter	VALUE	_	Units		Sample Type	Sample Time
TOLUENE			ug/1		GRAB	02:25 PM
Mean	910.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	13.800		mg/l		GRAB	02:25 PM
Mean	13.800					
parameter	VALUE		Units		Sample Type	Sample Time
TOTAL SUS. SOLIDS	352.000	_	mg/l	03/05/90	GRAB	Ø2:25 PM
Mean	352.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
TRICHLOROETHYLENE	8.300	_	ug/1	03/05/90	GRAB	Ø2:25 PM
Mean	8.300					
parameter	VALUE	v-90-	Units	Sample Date	Sample Type	Sample Time
VOLATILE SUS. SOLIDS	62.000		mg/l	03/05/90	GRAB	Ø2:25 PM
Mean	62.000					
parameter	VALUE	•••	Units	Sample Date	Sample Type	Sample Time
XYLENE	460.000		/1	03/05/90	GRAB	02:25 PM

<sup>\*</sup> indicates test results below detection limits

, ,	oarameter	VALUE		Units	Sample Date	Sample Type	Sample Time
	ZINC	552.000		ug/l	03/05/90	GRAB '	02:25 PM
•	Mean	552.000					
i	parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
ļ	рН	9.200 8.500	_	s.U. s.U.	03/05/90 04/02/90	GRAB GRAB	02:25 PM 10:45 AM
1	Mean	8.850					

<sup>\*</sup> indicates test results below detection limits

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES 6837 SAMPLERS (Signature) No PURPOSE OF ANALYSIS: . 1415 N. Harrison Kalamazoo, Michigan 49007 616-385-8157 DATE/TIME DATE/TIME С 0 G ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION R Α SAMPLE I.D. M NUMBER NUMBER OF CONTAINER Т М Α & REMARKS Р В Municipal OHL 29690 2 - 40 ml rump ) RECEIVED BY: (Signature) RECEIVED (Signature) E/TIME DATE/TIME ВY. ΒΥ: 3 RELINQUISHED ( (Signature) 4 RELINQUISHED I (Signature) **RESULT** ORGANIC COMPOUNDS RESULT GENERAL/CONVENTIONAL RESULT I TRACE METALS pН CADMIUM **EPA METHOD 601** BOD TOTAL CHROMIUM HEX CHROME CBOD RECEIVED ( COD COPPER TSS LEAD VSS NICKEL ZINC EPA METHOD 602 NH<sub>3</sub>-N TOTAL P SILVER MERCURY ORTHO P GREASE/OIL BERYLLIUM ELINQUISHED BY: CHLORIDE **BARIUM** REMARKS: CN - TOTAL OTHER DNR Sams 102 **CN - AMENABLE** 

PAGE 1

#### LAB# 9221730 ORCHARD HILLS LANDFILL OHL 29690

LAB# UNITS 	9221730 ug/l
DNR SCAN 1, PURG. HALOCARBON	
Chloroform	4.0
Bromodichloromethane	. 8.0
Dibromochloromethane	8.0
Bromoform	< 10
Methylene Chloride	4.0
1,1-Dichloroethene	. 2.0
1,1-Dichloroethane	< 2.0
trans-1,2-Dichloroethene	2.0
1,2-Dichloroethane	2.0
1,1,1-Trichloroethane	2.0
Carbon Tetrachloride	8.0
1,1-Dichloropropene	. 2.0
trans-1,3-Dichloropropene	2.0
Trichloroethene	2.0
cis-1,3-Dichloropropene	2.0

LAB# UNITS	9221730 ug/l
1,1,2-Trichloroethane	< 2.0
1,1,2,2-Tetrachloroethane	< 2.0
Tetrachloroethene	< 2.0
Chlorobenzene	< 0.2
cis-1,2-Dichloroethene	< 1.0
DNR SCAN 2, PURG. AROMATICS	
Benzene	< 0.2
Ethylbenzene	< 0.2
Toluene	300
Styrene	< 0.5
Xylenes	240

LANDFILL M. ORCHARD HILL SANITARY LANDFILL

3378 HENNESY ROAD - PHONE (616) 463-5588 - WATERVLIET, MICHIGAN 49098

ORCHARD HILL

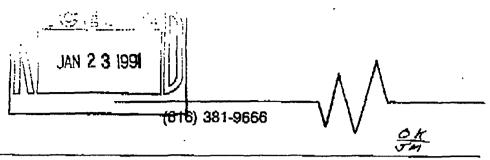
# FAX MESSAGE COVER SHEET

TO:	····		······	,		
ATTN:	В	ruce Mi	erchn.	JF_		Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Marie Ma
FROM:	0	<u> </u>			and a second	
FAX NUMBER	and the same of th	385	30	15		
NUMBER OF I	PAGES	FOLLOWING	THIS	COVER	SHEET_	3
sent by <u>J</u>	Im	TI	не <u>9.</u>	30	DATE	2/00/9

FAX NUMBER 616-463-7133

ORCHARD HILL

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 910044 Client No.: 1208 Date Activated: 1/09/91 Date Promised: 1/30/91 Date Validated: 1/21/91 Date Reported: 1/22/91 PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 910044. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

429 - 440

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 910044 Report Date: 1/22/91

Project Desc.: Analysis of one leachate sample.

Sample No.:910044-01 Sample type: aqueous Received on: 1/09/91 ID: "1/8/91, 13:00"

COD 12,900 mg/L MDNR Scan 1 & 2 See attached Cyanide, total Arsenic, total 0.03 mg/L 0.03 mg/L Cadmium, total <0.005 mg/L Chromium, total 0.08 mg/L Copper, total 0.06 mg/L Lead, total 0.010 mg/L Mercury, total Nickel, total Silver, total <0.0005 mg/L 0.43 mg/L <0.005 mg/L 0.84 mg/L Zinc, total

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

# PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and/or 2

To: Orchard Hills Landfill

Project No.:

910044

Report Date:

1/22/91

Proj. Desc.: Analysis of one leachate sample.

Sample No.: 910044-01

Sample type: aqueous Rec'd on: 1/09/91

Sample ID: "1/8/91, 13:00"

### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	1.6	Methylene chloride	170
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	7.7	Trichloroethene	2.0
1,2-Dichloroethane	77	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	40	•	•

### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	' 23	m-and/or p-Xylene	140
Ethyl benzene	` <i>58</i>	o-Xylene	62
Toluene	350	<del>-</del>	•

Concentrations are expressed as ug/L. --- indicated not analyzed. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10 KAR Laboratories, Inc.4425 Manchester RoadKalamazoo, MI 49002

	^ ^
(616) 381-9666	$\bigvee$

# ANALYTICAL REPORT

To: Orchard Hill Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Date: October 26, 1987

Laboratory Code: 871553

Enclosed are the results of one leachate sample submitted 10-6-87.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

William H. Bound /mer

Director

(616) 381-9666

# ANALYTICAL REPORT

TO: Orchard Hill Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Report Date: 10-26-87

Laboratory Code: 871553

Results are reported as ug/L except as noted.

COD, mg/L	56,700
Cadium	40
Chromium, total	300
Copper	160
Lead	110
Silver	<20

MDNR Scan 1 & 2

\*Refer to results attached

# ANALYTICAL REPORT

To: Orchard Hill Landfill Report Date : 10-26-87

Date Received: 10-6-87

P.O. Number :

Laboratory Code: 871553

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

I.D.: Leachate sample, 10-6-87

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<5	trans-1,2-Dichloroethene	<5
Bromoform	<5	1,2-Dichloropropane	<5
Carbon Tetrachloride	<5	cis-1,3-Dichloropropene	<5
Chlorobenzene	<5	trans-1,2-Dichloropropene	<b>&lt;</b> 5
Chloroform	<5	Methylene Chloride	49
Dibromochloromethane	<5	1,1,2,2-Tetrachloroethane	<b>&lt;</b> 5
1,1-Dichloroethane	<5	Tetrachloroethene	7.8
1,2-Dichloroethane	<5	1,1,1-Trichloroethane	<5
1,1-Dichloroethene	<5	1,1,2-Trichloroethane	14
cis-1,2-Dichloroethene	73	Trichloroethene	17

#### SCAN 2 Purgeable Aromatic Hydrocarbons

Result			Result	
Benzene	<5	Toluene	580	
Ethylbenzene	<5	Xylenes	160	

Results are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

\_\_\_\_\_

# ANALYTICAL REPORT

To: Orchard Hill Landfill

1936 Dorchester

Kalamazoo, MI 49098

Attn: Mr. John Cook

Report Date: 8-3-87

Laboratory Code: 871108

Enclosed are the results of one leachate sample submitted 7-20-87.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mfp

KAR Laboratories, Inc.

 4425 Manchester Road Kalamazoo, MI 49002



# ANAYTICAL REPORT

TO: Orchard Hill Landfill

1936 Dorchester

Kalamazoo, MI 49098

Attn: Mr. John Cook

Report Date: 8-3-87

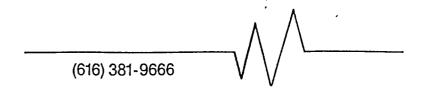
Laboratory-Code: 871108

COD, mg/L	43,500
Cadium, ug/L	53
Chromium, total, ug/L	362
Copper,ug/L	450
Lead,ug/L	<20
Silver,ug/L	<20

MDNR Scan 1 & 2

Refer to results attached.

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



# ANALYTICAL REPORT

To: Orchard Hill Landfill

Report Date : 8-3-87

Date Received : 7-20-87

Laboratory Code: 871108

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

I.D.: 7-20-87 Leachate Sample

### SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	1.6
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	2.3	trans-1,2-Dichloropropene	<1
Chloroform	<1	Methylene Chloride	200
-Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
l,1-Dichloroethane	49	Tetrachloroethene	15
1,2-Dichloroethane	210	l,l,l-Trichloroethane	7.6
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	20
cis-1,2-Dichloroethene	74	Trichloroethene	4 30

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	98	Toluene	840
Ethylbenzene	86	Xylenes	300

Results are expressed as ug/L

< indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatrography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

# ANALYTICAL REPORT

To: Orchard Hill Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Report Date: 5-14-87

Laboratory Code: 87646

Enclosed are the results of one leachate sample submitted 5-1-87.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Man V. Bonna

Director

WHB/nep

 KAR Laboratories, Inc.
 4425 Manchester Road Kalamazoo, MI 49002

	$\wedge$
(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 5-1-87

Laboratory Code:

87646

Purchase Order #

Report Date : 5-14-87

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification:

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	< 1	trans-1,2-Dichloroethene	< 1
Bromodichloromethane	< 1	cis-1,2-Dichloroethene	280
Dibromochloromethane	< 1	l,1,1-Trichloroethane	4.9
Chloroform	< 1	l,1,2-Trichloroethane	17
Carbon Tetrachloride	< 1	Trichloroethene	40
Methylene Chloride	830	1,1,2,2-Tetrachloroethane	< 1
l,l-Dichloroethane	47	Tetrachloroethene	31
1,2-Dichloroethane	390	1,3-Dichloropropene	< 1
l,l-Dichloroethene	< 1	Chlorobenzene	< 1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	77	Styrene	42
Ethylbenzene	98	Xylenes	240
Toluene	1,100		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

	_ ^ ^
(616) 381-9666	

#### ANALYTICAL REPORT

To:	Orchard	Hill	Landfill	Report Date:	5-14-87
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Sample I.D.: Leachate, 5-1-87 Laboratory Code: 87646

COD, mg/L	29,500
Cadmium, ug/L	40.0
Chromium, total, ug/L	1,800
Copper, ug/L	260
Lead, ug/L	2,600
Silver, ug/L	< 10

MDNR Scan 1 & 2

See attached.

#### LANDFILL MANAGEMENT COMPANY

3378 Hennesey Road Watervliet, Michigan 49098 Phone (616) 463-5588

Dear Mr. Powers

Feb. 18, 1987

Please Review this analysis of Leachate to be brought to your Plant upon your approval.

Please call Me at 1-463-5588 if this is acceptable. We Hope to get a load int yet This Week.

Thank you Stephen J. Batts office Onchard Hills Landfill

de 2/18/87

# LANDFILL MANAGEMENT COMPANY

3378 Hennesey Road Watervliet, Michigan 49098 Phone (616) 463-5588

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KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

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(616) 381-9666	$\overline{}$	

#### ANALYTICAL REPORT

COMPANY : Orchard Hill Landf	ill PROJECT CODE NO. : 87146
3378 Hennesey Rd.	DATE RECEIVED : 1-30-87
Watervliet, MI 49	098 DATE REPORTED : 2-17-87
ATTENTION: Mr. John Cook	PURCHASE ORDER NO.:
METHOD : <u>Standard Methods</u> , o	r TYPE OF SAMPLE(S) : Leachate

RESULTS:

COD, mg/L	23,200
Cadmium, ug/L	28
Copper, ug/L	220
Lead, ug/L	190
Silver, ug/L	<0.2
PCB, ug/L	<1

\*Refer to results attached

MDNR Scan 1 & 2

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

William H. Bouma

Director

Laboratories, Inc. 5 Manchester Road alamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 1-30-87

Laboratory Code: 87146

Purchase Order #

Report Date : 2-17-87

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate sample (1-30-87)

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	320
Dibromochloromethane	<1	1,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	46
Carbon Tetrachloride	<1	Trichloroethene	36
Methylene Chloride	1800	1,1,2,2-Tetrachloroethane	<1
l,1-Dichloroethane	32	Tetrachloroethene	40
1,2-Dichloroethane	940	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	7.9

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	200	Styrene	40
Ethylbenzene	86	Xylenes	260
Toluene	1600		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

(616) 381-9666	

#### ANALYTICAL REPORT

COMPANY : Orchard Hill Landfill PROJECT CODE NO. : 87073

3378 Hennesey Rd. DATE RECEIVED : 1-14-87

Watervliet, MI 49098 DATE REPORTED : 1-21-87

ATTENTION: Mr. John Cook PURCHASE ORDER NO.:

METHOD : Standard Methods, or TYPE OF SAMPLE(S) : Leachate

equivalent.

RESULTS:

COD, mg/L	27,800
Cadmium, ug/L	9.3
Copper, ug/L	120
Lead, ug/L	42
Silver, ug/L	<0.2
DNR Scan 1 & 2	*

<sup>\*</sup> Refer to results attached

Respectfully submitted,

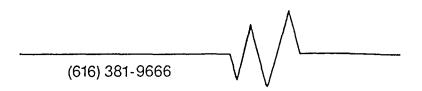
KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Mran H. Bourna

Director

AR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 1-14-87

Laboratory Code: 87073

Purchase Order #

Report Date : 1-21-87

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate (1-14-87)

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<5	trans-1,2-Dichloroethene	< 5
Bromodichloromethane	<b>&lt;</b> 5	cis-1,2-Dichloroethene	2,200
Dibromochloromethane	<b>&lt;</b> 5	l,1,1-Trichloroethane	<b>&lt;</b> 5
Chloroform	<b>&lt;</b> 5	1,1,2-Trichloroethane	130
Carbon Tetrachloride	<5	Trichloroethene	700
Methylene Chloride	10,000	1,1,2,2-Tetrachloroethane	< 5
l,l-Dichloroethane	35	Tetrachloroethene	120
1,2-Dichloroethane	1,200	1,3-Dichloropropene	<5
1,1-Dichloroethene	< 5	Chlorobenzene	< 5

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	390	Styrene	18
Ethylbenzene	60	Xylenes	270
Toluene	940		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	^ ^
(616) 381-9666	

#### ANALYTICAL REPORT

COMPANY : Orchard Hill Landfill

PROJECT CODE NO. : 87073-A

3578 Hennesey Road

DATE RECEIVED : 1-14-87

Watervliet, MI 49098

DATE REPORTED : 1-29-87

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

: Standard Methods, or equivalent. METHOD

TYPE OF SAMPLE(S): Leachate

RESULTS:

PCB's (ug/L)

<1

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director



# CITY OF KALAMAZOO, MICHIGAN

January 8, 1987

Mr. John Cook 1936 Dorchester Kalamazoo, MI 49001

Dear Mr. Cook:

After reviewing the most recent leachate sample results submitted to the City of Kalamazoo, it appears that the characteristics and concentrations of various parameters in this wastewater have changed significantly. Several sharp increases can be noted among contaminants of concern to the Kalamazoo Water Reclamation Plant, the most notable being the Chemical Oxygen Demand (COD), Silver (Ag), 1,2-Dichloroethane, Methylene Chloride, Benzene, Toluene and Xylenes. Please refer to the attached table that details the magnitude of these increases.

Even though this wastewater is not the only contributor of these contaminants to the Water Reclamation Plant, the risks associated with accepting such waste streams with these components present necessitates continued monitoring of this leachate. If the concentration in this wastewater continues to remain at these elevated levels or increases substantially, the charges associated with the acceptance and treatment of this wastewater may increase to help offset any additional treatment and analysis costs incurred due to higher loadings of these contaminants of concern at this facility.

At the present time, hauling and discharge of this wastewater may continue subject to the following conditions:

- 1. The representative sampling and analyses currently being conducted on every other load of the wastewater delivered to the Water Reclamation Plant must continue for all the components referred to in the letter to you dated October 17, 1986.
- 2. In addition, PCB analyses need to again be conducted on the next five samples submitted for analyses as detailed in item 1 above. This is because of much more strict monitoring requirements being placed on the Water Reclamation Plant for the particular parameter. This wastewater needs to be rechecked to ascertain whether or not the PCB concentrations are still below levels of concern.

Mr.John Cook January 8, 1987 Page 2

3. Grab samples may be taken here at the Water Reclamation Plant on each load of the wastewater discharged at this facility to assist City personnel in further characterizing this wastewater and to help determine how effectively the treatment process is removing the various contaminants of concern.

These continued monitoring requirements and conditions may raise questions, therefor, if they do, please do not hesitate to contact me. Thank you for your willingness to cooperate on this issue.

Respectfully,

Bruce E. Merchant

Water Quality Assurance Officer

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attach

c C. Powers

R. Simms

J. Eldred

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HILL
CANDFILL
LEACHATE
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# CITY OF KALAMAZOO, MICHIGAN

January 8, 1987

Mr. John Cook 1936 Dorchester Kalamazoo, MI 49001

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Even though this wastewater is not the only contributor of these contaminants to the Water Reclamation Plant, the risks associated with accepting such waste streams with these components present necessitates continued monitoring of this leachate. If the concentration in this wastewater continues to remain at these elevated levels or increases substantially, the charges associated with the acceptance and treatment of this wastewater may increase to help offset any additional treatment and analysis costs incurred due to higher loadings of these contaminants of concern at this facility.

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Mr.John Cook January 8, 1987 Page 2

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These continued monitoring requirements and conditions may raise questions, therefor, if they do, please do not hesitate to contact me. Thank you for your willingness to cooperate on this issue.

Respectfully,

Bruce E. Merchant

Water Quality Assurance Officer

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attach

c C. Powers

R. Simms

J. Eldred

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NOTE - All analyses conducted by life loberatures. Inc of tales	Xy lenes		Sture	Toluene	Ethyl Benzene	Benzene	Chloro banzene	Tetrachbroethene	Trichbroethene	1.1,2- Tr. Woodhang	Cis-1, 2- Dichlorothere	1,1- Ochloroethene	1,2-0, chloroethane	1,1- Dichloro ethane	Methylene Chloride	Chlorotorm	Dibromochloromethane	Bromodichloranethine	PCAS	Amenable CN	Silver	head	Copper	Cad mum (usl)	COD (mg/L)	Compaunas
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ORCHARD HILL LANDFILL LEACHATE RESULTS



# CITY OF KALAMAZOO, MICHIGAN

October 17, 1986

Orchard Hill Landfill Attention Mr. John Cook, Manager 3378 Hennesey Road Watervliet, MI 49098

Dear Mr. Cook:

Enclosed is a copy of a table compiled with data obtained from the six (6) analytical reports supplied to us through you by KAR Laboratories, Incorporated on the Orchard Hill Landfill leachate. After reviewing this data, we feel it is necessary to further characterize and evaluate this leachate being received at the City of Kalamazoo's Water Reclamation Plant. You have already been informed that two (2) parameters (PCB's and Amenable Cyanides) no longer need to be monitored. However, the levels of the other compounds analyzed for seem to fluctuate a great deal; therefore, please have every other load analyzed for eight (8) more loads. This means that only four (4) more loads out of the next eight (8) will need to be analyzed for the specified compounds. These additional sample results should provides us with a sufficient database so that much less frequent monitoring will be necessary.

I realize this letter may raise some questions; consequently, do not hesitate to contact me if further clarification is desired. Thank you for your cooperation.

Respectfully,

Bruce E. Merchant,

Water Quality Assurance Officer

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1		DATE OF SAM	PLES			
PARAMETERS	7/15/86	8/1/86	8/15/86	9/3/86	9/17/86	10/13/86 
COD (mg/L)	9,730	7,290	7,750	5,500	6,760	5,810
Cadmium (ug/L)	119	20	0.9	135	3	4.8
Copper (ug/L)	368	310	1,450	196	280	394
Lead (ug/L)	650	790	160	166	15	15
Silver (ug/L)	72	120	4.0	173	190	87
Amenable Cyanide (ug/L)	<10	<10	10	10	10	NR
PCB's (ug/L)	<0.1	<0.1	<0.1	<b>*</b> <50	<b>*</b> <50	NR
Methylene Chloride (ug/L)	150	31	3.1	13	39	130
1,1-DCEA (ug/L)	<1	<1	3.0	4.6	8.7	3.1
1,2-DCEA (ug/L)	69	30	27	22	76	96
cis-1,2-DCE (ug/L)	77	36	35	18	49	62
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9	5.0
Benzene (ug/L)	19	15	8.4	7	15	63
Ethyl Benzene (ug/L)	24	21	19	18	20	76
Toluene (ug/L)	160	110	130	150	180	110
Styrene (ug/L)	1.2	<1	<1	11	<1	69
Xylenes (ug/L)	50	41	28	55	81	54
		<u> </u>	I			

<sup>\* -</sup> Higher detection limit a result of change in sample matrix.

NR - indicates test for parameter not run



# CITY OF KALAMAZOO, MICHIGAN

October 17, 1986

Orchard Hill Landfill Attention Mr. John Cook, Manager 3378 Hennesey Road Watervliet, MI 49098

Dear Mr. Cook:

Enclosed is a copy of a table compiled with data obtained from the six (6) analytical reports supplied to us through you by KAR Laboratories, Incorporated on the Orchard Hill Landfill leachate. After reviewing this data, we feel it is necessary to further characterize and evaluate this leachate being received at the City of Kalamazoo's Water Reclamation Plant. You have already been informed that two (2) parameters (PCB's and Amenable Cyanides) no longer need to be monitored. However, the levels of the other compounds analyzed for seem to fluctuate a great deal; therefore, please have every other load analyzed for eight (8) more loads. This means that only four (4) more loads out of the next eight (8) will need to be analyzed for the specified compounds. These additional sample results should provides us with a sufficient database so that much less frequent monitoring will be necessary.

I realize this letter may raise some questions; consequently, do not hesitate to contact me if further clarification is desired. Thank you for your cooperation.

Respectfully,

Bruce E. Merchant,

Water Quality Assurance Officer

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c File

#### Orchard Hill Landfill Leachate Disposal Analytical Data October 16, 1986

		DATE OF SAI	MPLES			
PARAMETERS	7/15/86	8/1/86	8/15/86 	9/3/86	9/17/86	10/13/86
COD (mg/L)	9,730	7,290	7,750	5,500	6,760	5,810
Cadmium (ug/L)	119	20	0.9	135	3	4.8
Copper (ug/L)	368	310	1,450	196	280	394
Lead (ug/L)	650	790	160	166	15	15
Silver (ug/L)	72	120	4.0	173	190	87
Amenable Cyanide (ug/L)	<10	<10	10	10	10	NR
PCB's (ug/L)	<0.1	<0.1	<0.1	<b>*</b> <50	<b>* &lt;</b> 50	NR
Methylene   Chloride (ug/L)	150 <sup>°</sup>	31	3.1	13	39	130
1,1-DCEA (ug/L)	<1	<1	3.0	4.6	8.7	3.1
1,2-DCEA (ug/L)	69	30	27	22	76	96
cis-1,2-DCE (ug/L)	77	36	35	18	49	62
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9	5.0
Benzene (ug/L)	19	15	8.4	7	15	63
Ethyl Benzene (ug/L)	24	21	19	18	20	76
Toluene (ug/L)	160	110	130	150	180	110
Styrene (ug/L)	1.2	<1	<1	11	<1	69
Xylenes (ug/L)	50	41	28	55	81	54
	<del></del>			·		

<sup>\* -</sup> Higher detection limit a result of change in sample matrix.

NR - indicates test for parameter not run

# Orchard Hill Landfill Leachate Disposal Analytical Data September 29, 1986 OCTOBER 16, 1986

PARAMETERS	   7/15/86	DATE   8/1/86	OF SAMPLES   8/15/86	9/3/86	9/17/86	10/13/86
COD (mg/L)	9,730	7,290	7,750	5,500	6,760	5,810
Cadmium (ug/L)	119	20	0.9	135	3	4.8
Copper (ug/L)	368	310	1,450	196	280	394
Lead (ug/L)	650	790	160	166	15	15
Silver (ug/L)	72	120	4.0	173	190	87
Amenable   Cyanide (ug/L)	<10	<10	10	10	10	NR
PCB's (ug/L)	<0.1	<0.1	<0.1	<b>*</b> <50	<b>*</b> <50	NR
Methylene   Chloride (ug/L)	150	31	3.1	13	39	130
l,l-DCEA (ug/L)	<1	<1	3.0	4.6	8.7	3.1
1,2-DCEA (ug/L)	69	30	27	22	76	96
cis-1,2-DCE (ug/L)	77	36	35	18	49	62
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9	5.0
Benzene (ug/L)	19	.15	8.4	7	15	63
Ethyl Benzene (ug/L)	24	21	19	18	20	76
Toluene (ug/L)	160	110	130	150	180	110
Styrene (ug/L)	1.2	<1	<1	11	<1	69
Xylenes (ug/L)	50	41	28	55	81	54

<sup>\* -</sup> Higher detection limit a result of change in sample matrix.

\*\*Rest for NR - Indicates parameter not run

(616) 381-9666

ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: Client No.: 89157 105

Project Date:

8/10/8

Date Promised: Date Reported: 8/31/8 8/31/8

PO#:

Project Desc.: Analysis of one leachate sample

Refer to attached reports.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/crc

KAR Laboratories, Inc.

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: 89157 Client No.: 105 Project Date: 8/10/8 Date Promised: 8/31/8

Date Promised: 8/31/8
Date Reported: 8/31/8

PO#:

Project Desc.: Analysis of one leachate sample

Sample No.: 891573-01

Rec'd on: 8/10/89

Sample ID: Orchard Hills, Leachate, 8/10/89

COD

19,000 mg/L

MDNR Scan 1 & 2	See	attached	
Cyanide, total		0.09	mg/L
Cadmium, total		0.01	mg/r
Chromium, total			mg/L
Copper, total		0.10	mg/L
Lead, total		0.13	mg/L
Mercury, total		<0.0005	mg/L
Nickel, total		0.86	mg/L
Silver, total		<0.005	mg/L
Zinc, total		24.1	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Date Received: 8/10/89
Date Promised: 8/31/89
Date Reported: 8/31/89

Sample No.: 891573-01

Attn: Mr. Don Batts

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills, Leachate, 8/10/89

# SCAN 1 - Purgeable Halocarbons

			E.P.
Bromodichloromethane	ND	trans-1,2-Dichloroethcna	ИĽ
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.4	Methylene chloride	160
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	4.6
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	33	Trichloroethene	16
1,2-Dichloroethane	150	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	11
cis-1,2-Dichloroethene	63	_	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	30	m-and/or p-Xylene	290
Ethyl benzene	93	o-Xylene	93
Toluene	700	~	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10

(616) 381-9666	

#### ANALYTICAL REPORT

COMPANY : Orchard Hill Landfill

PROJECT CODE NO. : 861569

3378 Hennesey Rd.

DATE RECEIVED : 12-2-86

Watervliet, MI 49098

: 12-9-86 DATE REPORTED

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

METHOD : Standard Methods, or equivalent.

TYPE OF SAMPLE(S) : \_\_Leachate

RESULTS:

COD, mg/L

23,100

Cadmium, ug/L

12

Copper, ug/L

150

Lead, ug/L

20

Silver, ug/L

210

DNR Scan 1 & 2

Refer to results attached

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcm

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received: 12-2-86

Laboratory Code: 861569

Purchase Order #

Report Date : 12- 9-86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate (12-2-86)

# SCAN 1 Purgeable Halocarbons

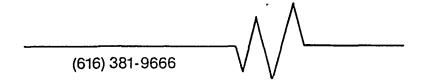
	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	€50
Dibromochloromethane	63	l,l,l-Trichloroethane	<1
Chloroform	98	1,1,2-Trichloroethane	160
Carbon Tetrachloride	<1	Trichloroethene	56
Methylene Chloride	4400	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	14	Tetrachloroethene	59
1,2-Dichloroethane	1700	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	14

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	350	Styrene	20
Ethylbenzene	57	Xylenes	190
Toluene	730		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received: 3-13-87

Laboratory Code: 87

87383

Purchase Order #

Report Date : 4-6-87

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate, 3-13-87

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	140
Dibromochloromethane	<1	1,1,1-Trichloroethane	7.4
Chloroform	<1	1,1,2-Trichloroethane	16
Carbon Tetrachloride	<1	Trichloroethene	46
Methylene Chloride	3300	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	• <1	Tetrachloroethene	20
1,2-Dichloroethane	520	1,3-Dichloropropene	<1
l,l-Dichloroethene	<1	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	120	Styrene	<1
Ethylbenzene	710	Xylenes	1000
Toluene	1200		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

# 

	_ \ ^/	
(616) 381-9666	$\neg \lor \lor$	

# ANALYTICAL REPORT

To: Orchard Hill Landfill Report Date: 4-6-87

Sample Laboratory

I.D.: Leachate, 3-13-87 Code : 87383

COD, mg/L	24,200
Cadmium, ug/L	20
Copper, ug/L	190
Lead, ug/L	114
Silver, ug/L	0.2
PCB's, ug/L	<1
MDNR Scan 1 & 2	*

<sup>\*</sup>Refer to results attached

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	^
(616) 381-9666	$\vee$

#### ANALYTICAL REPORT

COMPANY : Orchard Hill Landfill

PROJECT CODE NO.

**:** 87256

3378 Hennesey Rd.

DATE RECEIVED

: 2-23-87

Watervliet, MI 49098

DATE REPORTED

3-10-87

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

**METHOD** 

: Standard Methods, or equivalent.

TYPE OF SAMPLE(S): Leachate

RESULTS

COD, mg/L	20,300
Cadmium, ug/L	18
Copper, ug/L	280
Lead, ug/L	350
Silver, ug/L	0.4
PCB, ug/L	<1
MDNR Scan 1 & 2	*

<sup>\*</sup>Refer to results attached

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcm

0k 3-17-87 B4\_\_\_

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	^
(616) 381-9666	V \/

#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 2-23-87

Laboratory Code: 87256

Purchase Order #

Report Date : 3-10-87

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate (2-23-87)

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	270
Dibromochloromethane	<1	l,l,l-Trichloroethane	11
Chloroform	<1	1,1,2-Trichloroethane	23
Carbon Tetrachloride	<1	Trichloroethene	44
Methylene Chloride	1200	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	79	Tetrachloroethene	22
1,2-Dichloroethane	650	1,3-Dichloropropene	<1
l,l-Dichloroethene	<1	Chlorobenzene	10

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	170	Styrene	32
Ethylbenzene	96	Xylenes	300
Toluene	1500	_	

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

Date: February 1, 1988

1936 Dorchester

Kalamazoo, MI 49001

Laboratory Code: 880094

Attn: Mr. John Cook

Re: Analysis of one leachate sample submitted January 19, 1988.

COD, mg/L	32,000
<pre>Metals (ug/L)</pre>	
Cadmium	40
Chromium, total	130
Copper	150
Lead	60
Silver	<20
DNR Scan 1 & 2	Refer to the

Respectfully submitted,

results attached

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcr

#### ANALYTICAL REPORT

To: Orchard Hills Landfill Report Date : 2- 1-88

Date Received : 1-19-88

P.O. Number :

Laboratory Code: 880094

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

<u>I.D.</u>: Leachate sample submitted 1-19-88.

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromodichloromethane	<5	trans-1,2-Dichloroethene	<5
Bromoform	<5	1,2-Dichloropropane	<5
Carbon Tetrachloride	<5	cis-1,3-Dichloropropene	<5
Chlorobenzene .	<5	trans-1,3-Dichloropropene	<5
Chloroform	<5	Methylene Chloride	200
Dibromochloromethane	<5	1,1,2,2-Tetrachloroethane	<5
1,1-Dichloroethane	46	Tetrachloroethene	<5
1,2-Dichloroethane	130	1,1,1-Trichloroethane	<5
1,1-Dichloroethene	<5	1,1,2-Trichloroethane	18
cis-1,2-Dichloroethene	110	Trichloroethene	28

#### SCAN 2 Purgeable Aromatic Hydrocarbons

	<u>Result</u>		Result
Benzene	74	m-and/or p-Xylene	210
Ethylbenzene	<5	o-Xylene	82
Toluene	950		

Results are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

KAR Laboratories, Inc. 4425 Manchester Road

Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: 892064 Client No.: 1059 Project Date: 10/11/89 Date Promised: 11/01/89

Date Reported:

10/31/89

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 892064-01 Rec'd on: 10/11/89

Sample ID: Orchard Hills Leachate, 10/11/89

COD 18,600 mg/L

MDNR Scan 1 & 2 See attached

Cyanide, total 0.08 mg/L Cadmium, total 0.02 mg/L Chromium, total 0.33 mg/L Copper, total 0.11 mg/L Lead, total 0.09 mg/L

Mercury, total <0.0005 mg/L Nickel, total 0.72 mg/L

Silver, total < 0.005 mg/L

Zinc, total 23.4 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

LOAD 213-225

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D. Director

KAR Laboratories, Inc.

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Sample No.: 892064-01 Date Received: 10/11/89 Date Promised: 11/01/89 Date Reported: 10/31/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills Leachate, 10/11/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane Bromoform Bromomethane Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloromethane Dibromochloromethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethane	ND ND ND 1.8 ND ND ND 28 140	trans-1,2-Dichloroethene 1,2-Dichloropropane cis-1,3-Dichloropropene trans-1,3-Dichloropropene Methylene chloride 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane 1,1,2-Trichloroethane Trichloroethene Trichloroethene Trichlorofluoromethane Vinvl chloride	ND ND ND 130 ND 3.1 ND ND 12 ND
1,1-Dichloroethene cis-1,2-Dichloroethene	ND 72	Vinyl chloride	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	29	m-and/or p-Xylene	320
Ethyl benzene	94	o-Xylene	110
Toluene	780		

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10

	F./c
	\ \ \\
(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: 892064

Client No.: 1059 Project Date: 10/11/89 Date Promised:

11/01/89 Date Reported: 10/31/89

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 892064-01 Rec'd on: 10/11/89

Sample ID: Orchard Hills Leachate, 10/11/89

COD 18,600 mg/L

MDNR Scan 1 & 2 See attached

Cyanide, total 0.08 mg/L Cadmium, total 0.02 mg/L

Chromium, total 0.33 mg/L

Copper, total 0.11 mg/L

Lead, total 0.09 mg/L

Mercury, total <0.0005 mg/L

Nickel, total 0.72 mg/L

Silver, total <0.005 mg/L

Zinc, total 23.4 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

for Lon D 225-237

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Illiam H. Bouma

Director

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098 Date Received: 10/11/89
Date Promised: 11/01/89
Date Reported: 10/31/89

Sample No.: 892064-01

Attn: Mr. Don Batts

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills Leachate, 10/11/89

# SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	1.8	Methylene chloride	130
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	3.1
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	28	Trichloroethene	12
1,2-Dichloroethane	140	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	11
cis-1,2-Dichloroethene	72		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	29	m-and/or p-Xylene	320
Ethyl benzene	94	o-Xylene	110
Toluene	780	-	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10



June 2, 1988

Southeast Berrien County Landfill Authority 3200 Chamberlain Buchanan, MI 49107

Dear Board Members:

Attached are the results of our analysis of the samples of landfill leachate from your landfill, received on May 26, 1988.

These results are extremely encouraging as to the viability of treating the leachate in a municipal wastewater treatment plant. However, a balance must be struck between leachate quantities and treatment plant capacity.

Thank you again for the opportunity to provide this service. Please contact us if you have any questions or if we can be of further assistance.

Very truly yours,

WW OPERATION SERVICES

Keith Oldewurtel Vice President

1/CEW

Steven E. Williams, P.E.

Project Manager

/tdm 62buch

#### ANALYTICAL SERVICES EDI LABORATORY REPORT

CLIENT: S.E. BERRIEN CO. LANDFILL

PROJECT NO.:

26127

LOCATION: BERRIEN COUNTY

SAMPLED BY: CARL A. MALSOM

DESCRIPTION: LANDFILL LEACHATE

DATE SAMPLED: 05/26/88 TIME: 11:30 AM

05/26/88 TIME: 2:05 PM DATE RECEIVED:

DATE COMPLETED: 06/01/88

SCHEDULED COMPLETION: 05/31/88

ANALYST: SH,CS,RVB

QUALITY CONTROL REVIEW BY: KLM

WORKSHEET NO:

	LANDFILL		DETECTION LIMIT	UNITS
	THE THE			
EDI SAMPLE NO:	90426			
COPPER, TOTAL	<0.01		0.01	mg/l
CHROMIUM, TOTAL	0.08		0.05	mg/l
ZINC, TOTAL	1.4		0.02	mg/l
LEAD, TOTAL	<0.05	*	0.05	mg/l
ARSENIC, TOTAL	33		2.0	ug/l
CADMIUM, TOTAL	<0.01		0.01	mg/l
MERCURY, TOTAL	<5.0		5.0	ug/l
SELENIUM, TOTAL	20		10	ug/l
IRON, TOTAL	790	•	0.01	mg/l
VOA-624	ENCLOSED			
B/N/A - 625	ENCLOSED			
COD ·	29,940		50	mg/l
pH VALUE	6.03		std	. units

# ANALYTICAL SERVICES PRIORITY POLLUTANT ANALYSIS

#### **VOLATILE FRACTION**

CLIENT: BERRIAN CO LANDFILL AUTHORITY DATE SAMPLED: 05-26-1988 TIME: 11:30 AM PROJECT NO.: 26127 DATE RECEIVED: 05-26-1988 TIME: 02:05 PM SAMPLE: LANDFILL TEST DATE: 05-26-1988 SAMPLE NO. 90426

COMPOUND	RESULT
	(mg/L)
Benzene	< 0.050
Bromodichloromethane	< 0.10
Bromoform	< 0.75
Bromomethane	< 0.50
Carbon Tetrachloride	< 0.20
Chlorobenzene	< 0.050
Chlorodibromomethane	< 0.15
Chloroethane	< 0.50
Chloroform	< 0.050
2-Chloroethyl Vinyl Ether	< 0.50
Chloromethane	< 0.50
1,1-Dichloroethane	0.23
<i>1,2-Dichloroethane</i>	< 0.10
1,1-Dichlorcethylene	< 0.10
trans-1,2-Dichloroethylene	< 0.10
1,2-Dichloropropane	< 0.15
cis-1,3-Dichloropropylene	< 0.20
trans-1,3-Dichloropropylene	< 0.20
Ethylbenzene	0.082
Methylene Chloride	4.7
1,1,2,2-Tetrachloroethane	< 0.10
<i>Tetrachloroethylene</i>	0.14
Toluene	1.0
1,1,1-Trichlorcethane	0.24
1,1,2-Trichloroethane	< 0.15
Trichloroethylene	< 0.10
Trichlorofluoromethane	0.34
Vinyl Chloride	< 0.50
Xylene	< 0.50

<sup>\*\*</sup> A less than (<) sign indicates that the compound was nondetectable at the specified detection limit.

# ANALYTICAL SERVICES PRIORITY POLLUTANT ANALYSIS

#### SEMI VOLATILES FRACTION

DATE SAMPLED:

DATE RECEIVED:

05-26-1988

05-26-1988

TIME: 11:30

TIME: 02:05 PM

2.0

< 0.008

< 0.010

< 0.030

< 0.006

< 0.008

< 0.040

< 0.002

< 0.002

< 0.006

< 0.010

0.33

CLIENT: BERRIAN CO. LANDFILL

PROJECT NO.: 26127

2-Chloronaphthalene

4-Chlorophenyl Phenyl Ether

Dibenzo (a,h) Anthracene

Di-n-butyl Phthalate

3,3'-Dichlorobenzidine

1,2-Dichlorobenzene

1,3-Dichlorobenzene

1,4-Dichlorobenzene

2,4-Dichlorophenol

Diethylphthalate

2-Chlorophenol

Chrysene

SAMPLE: LANDFILL TEST DATE: 05-31-1988 SAMPLE NO. 90426 COMPOUND RESULT COMPOUND RESULT (mq/L)(mg/L)*Acenaphthene* < 0.004 2,4-Dimethylphenol < 0.006 *Acenaphthylene* < 0.002 Dimethyl Phthalate 1.2 Anthracene < 0.002 4,6-Dinitro-2-methylphenol < 0.040 Benzidine < 0.10 2,4-Dinitrophenol < 0.10 Benzo (a) Anthracene < 0.010 2,4-Dinitrotoluene < 0.020 Benzo (b) Fluoranthene Benzo (k) Fluoranthene < 0.010 2,6-Dinitrotoluene < 0.018 < 0.010 Di-n-octylphthalate < 0.002 Benzo (a) Pyrene < 0.010 1,2-Diphenylhydrazine < 0.002 Bis (2-chloroethyl) ether < 0.008

Bis-(2-chloroethoxy) Methane < 0.008

Bis-(2-chloroisorma-1) Fluoranthene < 0.002 Fluorene < 0.004 *Hexachlorobenzene* < 0.010 Bis-(2-chloroisopropyl) Ether Hexachlorobutadiene < 0.010 Bis-(2-Ethyl Hexyl) Phthalate < 0.004 *Hexachloroethane* < 0.014 4-Bromophenyl Phenyl Ether < 0.014 *Hexachlorocyclopentadiene* < 0.010 Butyl Benzyl Phthalate < 0.006 Indeno (1,2,3-cd) Pyrene < 0.020 4-Chloro-3-methylphenol < 0.008 Isophorone < 0.004

< 0.004

< 0.004

< 0.006

< 0.010

< 0.020

< 0.006

< 0.006

< 0.006

< 0.040

< 0.006

1.2

0.012

Naphthalene

Nitrobenzene

2-Nitrophenol

4-Nitrophenol

Phenanthrene

Phenol

Pyrene

N-Nitrosodiphenylamine

1,2,4-Trichlorobenzene

2,4,6-Trichlorophenol

Pentachlorophenol

N-Nitrosodi-n-propylamine

<sup>\*\*</sup> A less than (<) sign indicates that the compound was nondetectable at the specified detection limit.



Mark W Tenney, Sc D., PE Joseph L Pavoni, Ph.D., P.E

Richard L. Clevidence, P.E. Gary T. Boblitt, P.E. Robert A. Hawkins, P.E. Charles W. Dickard Michael J. Keal, P.E. Stephen W. Keiber, P.E

\* June 2, 1988 South Bend, IN

Mr. Carl Harris Southeast Berrien County Landfill 3200 Chamberlain Road Buchanan, Michigan 49107

Dear Mr. Harris:

Our laboratory has provided us with the following leachate analysis information:

BOD 13,100 mg/l Organic Carbon 5,090 mg/l Mercury less than .0001 mg/l Selenium less than .0001 mg/l

Volatiles	Micrograms per Liter
Benzene Chloroethane 1,1 Dichloroethane cis-1,2 Dichloroethylene Ethelbenzene Methylene Chloride Tetra Chloroethylene Toluene 1,1,1 Trichloroethane Trichloroethlyene Trichlorofloromethane Xylene	14.1 151 101 12.4 37.3 570 77.3 359 113 41.4 124
Total of the above	1752.50

Mr. Harris June 2, 1988 Page 2

The remaining laboratory analysis will be available in several days and will be forwarded to you as soon as we receive it.

Should you have any questions regarding the above information, please do not hesitate to contact our office.

Sincerely yours,

Mark W. Tenney

Chief Executive Officer

MWT/mh

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Rec'd 2-26-88

EIS Lab No. 911H

#### RAW LEACHATE SAMPLE

SHIPMENT RECEIVED Week of the 15th.

SOUTHEAST BERRIEN COUNTY LANDFILL

SAMPLE TAKEN TO EIS Feb. 26, 1988

ANALYIZE FOR THE FOLLOWING,

Cd < 0.04 mg/l

Cr 0.12 mg/1

Ni 0.46 mg/1

Zn 0.96 mg/l

Cu 0.06 mg/l

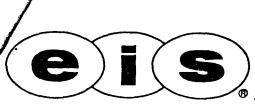
Pb 0.22 mg/1

COD 16,100 mg/1

City of Buchanan Wastewater Treatment Plant 302 Red Bud Trail N. Buchanan, Mi 49107

Phone (616)695-5291

\*



# EIS ENVIRONMENTAL ENGINEERS, INC.

1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

City of Buchanan
Wastewater Treatment Plant
Attn: Accounts Payable
302 Red Bud Trail North
Buchanan, MI 49107

Date: March 15, 1988 Invoice No.: 8927-01 Terms: Net 15 Days

# For Professional Services Rendered

Laboratory analysis performed on two (2) samples (Southeast Berrien County Landfill) received 2-26-88, EIS Lab No. 911H and 910H, reports submitted 3-14-88.

Total Fee Due

\$ 216.00

(616) 381-9666	

To: Orchard Hill Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. John Cook

Report Date: Aug. 21/86

Sample Date: Aug. 15/86

Laboratory

Code : 86947

Re: Analysis of one (1) leachate sample submitted August 15, 1986.

	<u>Leachate</u>
COD, mg/l	7,750
Cadmium, ug/L	0.9
Copper, ug/L	1,450
Lead, ug/L	160
Silver, ug/L	4.0
Cyanide, Amenable, ug/L	10
MDNR Scan 1 & 2	Refer to report attached
PCB's, ug/L	<0.1

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

illiam H. Bouma

Director



# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : Aug. 15/86

Mr. John Cook

Laboratory Code: 86947

Purchase Order #

Report Date : Aug. 21/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate sample dated 8-15-86

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	35
Dibromochloromethane	<1	l,l,l-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	1.3
Methylene Chloride	3.1	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	3.0	Tetrachloroethene	<1
1,2-Dichloroethane	27	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	<u>Result</u>		Result
Benzene	8.4	Styrene	<1
Ethylbenzene	19	Xylenes	28
Toluene	130		

Results are expressed as ug/L

< indicates not detected at the stated detection limit

`	·	^	,
	(616) 381-9666		•

To: Orchard Hill Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. John Cook

Report Date: Aug. 8, 1986

Sample Date: Aug. 1, 1986

Laboratory

Code : 86888

Re: Analysis of one (1) leachate sample submitted August 1, 1986.

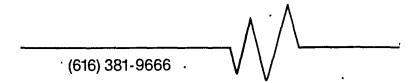
<u>Leachate</u>
7,290
20
310
790
120
<10
Refer to report attached
<0.1

Respectfully submitted,

KAR Laboratories, Inc.

WIIIIAM P. DOUMA /MEH William H. Bouma, Ph.D.

Director



# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : Aug. 1/86

Mr. John Cook

Laboratory Code: 86888

Purchase Order #

Report Date : Aug. 8/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate 8-1-86

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	36
Dibromochloromethane	<1	1,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	3.6
Methylene Chloride	31	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	30	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1 ,	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	15	Styrene	<1
Ethylbenzene	21	Xylenes	41
Toluene	110		

Results are expressed as ug/L

< indicates not detected at the stated detection limit

(616) 381-9666

#### ANALYTICAL REPORT

Orchard Hill Landfill To:

Report Date: Aug. 8, 1986

3378 Hennesey Road Watervliet, MI 49098

Sample Date:

Aug. 1, 1986

Attn: Mr. John Cook

Laboratory Code

86888

Analysis of one (1) leachate sample submitted August 1, 1986. Re:

	<u>Leachate</u>
COD, mg/L	7,290
Cadmium, ug/L	20
Copper, ug/L	310
Lead, ug/L	790
Silver, ug/L	120
Cyanide, Amenable, ug/L	<10
MDNR Scan 1 & 2	Refer to report attached
PCB's, ug/L	<0.1

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

(616) 381-9666

# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : Aug. 1/86

Mr. John Cook

Laboratory Code: 86888

Purchase Order #

Report Date : Aug. 8/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate 8-1-86

### SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	36
Dibromochloromethane	<1	· 1,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	3.6
Methylene Chloride	31	1,1,2,2-Tetrachloroethane	<1
l,1-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	30	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1 , , , ,	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	15	Styrene	<1
Ethylbenzene	21	Xylenes	41
Toluene	110		

Results are expressed as ug/L

< indicates not detected at the stated detection limit

(616) 381-9666	

To: Orchard Hill Landfill

Date: Sept. 24, 1986

3378 Hennesey Road Watervliet, MI 49098

Laboratory Code: 861119

Attn: Mr. John Cook

Re: Analysis of one (1) leachate sample submitted 9-17-86.

	Leachate
COD, mg/L	6760
Cadmium, ug/L	3
Copper	. 280
Lead	15
Silver	190
Cyanide, Amenable, ug/L	10
MDN Scan 1 & 2	Refer to results attached
PCB's	<50*

<sup>\*</sup>High detection limit due to sample matrix.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

William H. Bouma

Director

	^	
(616) 381-9666	$\bigvee$	

# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 9-17-86

Laboratory Code: 861119

Purchase Order #

Report Date : 9-24-86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate, 9-17-86.

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	49
Dibromochloromethane	<1	l,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	3.9
Methylene Chloride	39	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	8.7	Tetrachloroethene	<1
1,2-Dichloroethane	76	1,3-Dichloropropene	<1
l,1-Dichloroethene	<1	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	15	Styrene	<1
Ethylbenzene	20	Xylenes	81
Toluene	180		

Results are expressed as ug/L

< indicates not detected at the stated detection limit

(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Report Date: Sept. 10, 1986

3378 Hennesey Road Watervliet, MI 49098

Sample Date: Sept. 3, 1986

Attn: Mr. John Cook

Lab. Code : 861050

Re: Analysis of one (1) leachate sample submitted Sept. 3, 1986.

	Leachate
COD, mg/L	5,500
Cadmium, ug/L	135
Copper, ug/L	196
Lead, ug/L	166
Silver, ug/L	173 <sup>,</sup>
Cyanide, Amenable, ug/L	10
MDNR Scan 1 & 2	Refer to report attached
PCB's, ug/L	<50*

<sup>\*</sup>High detection limit due to the sample matrix.

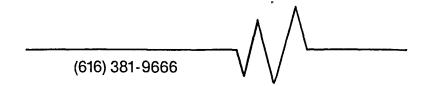
Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

William H. Bouma

Director



#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : Sept. 3/86

Mr. John Cook

Laboratory Code: 861050

Purchase Order #

Report Date : Sept. 10/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate 9-3-86

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	18
Dibromochloromethane	<1	l,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	4.1
Methylene Chloride	13	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	4.6	Tetrachloroethene	<1
1,2-Dichloroethane	22	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	<u>Result</u>		Result
Benzene	7	Styrene	11
Ethylbenzene	18	Xylenes	55
Toluene	150		

Results are expressed as ug/L

< indicates not detected at the stated detection limit

	V. \	
(616) 381-9666		

To: Orchard Hill Landfill

3378 Hennesey Rd.

Watervliet, MI 49098

Attn: Mr. John Cook

Date: 10-13-86

Laboratory Code: 861238

Re: Analysis of one (1) leachate sample submitted 10-6-86.

	Leachate
COD, mg/L	5810
Cadmium, ug/L	4.8
Copper, ug/L	394
Lead, ug/L	15
Silver, ug/L	87
MDNR Scan 1 & 2	Refer to report attached

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

(616) 381-9666

# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received: 10-6-86

Laboratory Code: 861238

Purchase Order #

Report Date : 10-13-86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate 10-6-86

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	62
Dibromochloromethane	<1	l,l,l-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	5.0
Methylene Chloride	130	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	3.1	Tetrachloroethene	1.1
1,2-Dichloroethane	96	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	<1

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		
Benzene	63	Styrene	69
Ethylbenzene	76	Xylenes	54
Toluene	110		

Results are expressed as ug/L < indicates not detected at the

< indicates not detected at the stated detection limit

# Orchard Hill Landfill Leachate Disposal Analytical Data September 29, 1986

•	<u> </u>	DATE (	OF SAMPLES		
PARAMETERS	7/15/86	8/1/86	8/15/86	9/3/86	9/17/86
COD (mg/L)	9,730	7,290	7,750	5,500	6,760
Cadmium (ug/L)	119	20	0.9	135	3
Copper (ug/L)	368	310	1,450	196	280
Lead (ug/L)	650	790	160	166	15
Silver (ug/L)	72	120	4.0	173	190
Amenable   Cyanide (ug/L)	<10	<10	10	10	10
PCB's (ug/L)	<0.1	<0.1	<0.1	* <50	* <50
Methylene   Chloride (ug/L)	150	31	3.1	13	39
l,1-DCEA (ug/L)	<1	<1	3.0	4.6	8.7
1,2-DCEA (ug/L)	69	30	27	22	76
cis-1,2-DCE (ug/L)	77	36	35	18	49
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9
Benzene (ug/L)	19	,15	8.4	7	15
Ethyl Benzene     (ug/L)	24	21	19	18	20
Toluene (ug/L)	160	110	130	150	180
Styrene (ug/L)	1.2	<1	<1	11	<1
Xylenes (ug/L)   	50	41	28	55	81   

<sup>\* -</sup> Higher detection limit a result of change in sample matrix.

# Orchard Hill Landfill Leachate Disposal Analytical Data September 29, 1986

1		D3.000	OD ONNOT DO		
PARAMETERS	7/15/86	DATE ( 8/1/86	OF SAMPLES   8/15/86	9/3/86	9/17/86
COD (mg/L)	9,730	7,290	7,750	5,500	6,760
Cadmium (ug/L)	119	20	0.9	135	3
Copper (ug/L)	368	310	1,450	196	280
Lead (ug/L)	650	790	160	166	15
Silver (ug/L)	72	120	4.0	173	190
Amenable   Cyanide (ug/L)	<10	<10	10	10	10
PCB's (ug/L)	<0.1	<0.1	<0.1	* <50	* <50
Methylene   Chloride (ug/L)	150	31	3.1	13	39
l,1-DCEA (ug/L)	<1	<1	3.0	4.6	8.7
l,2-DCEA (ug/L)	69	30	27	22	76
cis-1,2-DCE (ug/L)	77	36	35	18	49
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9
Benzene (ug/L)	19	,15	8.4	7	15
Ethyl Benzene     (ug/L)	24	21	19	18	20
Toluene (ug/L)	160	110	130	150	180
Styrene (ug/L)	1.2	<1	<1	11	<1
Xylenes (ug/L)   	50	41	28	55	81   

 $<sup>\</sup>star$  - Higher detection limit a result of change in sample matrix.

# KWRP METALS REPORT

SAMPLES: 0/	CLIL	ARD HILL	_	<u> </u>		
SAMPLE LOCATI	ONS:	(1) _	LANGFIL	L LEACL	PATE	Date: 8/14/8(
•		(2) _				Date:
		(3) _				Date:
					,	Date:
						Date:
		(°, <u> </u>	<del></del>		· · · · · · · · · · · · · · · · · · ·	
Lab I.D.		LANDFILL	(2)	(3)	(4)	(5)
Parameters	i	LEALHATE	i	i	i	i
Cadmium	1	210	<del> </del>			
Chromium	1	140			<del></del>	
	1	P50 .				
Copper Lead	1	5.P				
Nickel	1	400	<del></del>			<del></del>
Zinc	V					
Arsenic	1	1500		<del></del>	<del></del>	
Selenium	-					
Silver				<del></del>	<del></del>	<del></del>
Mercury		< 16	·	<del></del>	+	
Iron Beryllium				<del>.  </del>		<del></del>
Cyanide Calcium		30				
				<del></del>		
Magnesium				_		
Sodium					<del></del>	
Potassium				<del></del>		
BARIUM	~			<del></del>		
Comments: <u>LF</u>	SurT	s Kelolre	1 15 4	L.		
CYANDE	NELO	IPST E	A HOL	OING TIM	F (30 DA	1ys )
		<del></del>				
9/20/01 Mark						
Mak	1	~~				

# KWRP METALS REPORT

SAMPLES: )/	CCHI	ORD HILL	۷.				
SAMPLE LOCATI	ONS:	(1)	LANDFIL	L LEAC A	PATE	Date: \$//4/8-(	
•		(2) _				Date:	
		(3)		·		Date:	
		(4) _	Date:				
		(5) _	. Date:				
Lab I.D.	Τ	(1)	(2)	(3)	(4)	(5)	
_	1	LANDFILL	1	1	ļ		
Parameters	<b></b>		ļ	<del></del>			
Cadmium	1	210					
Chromium	1	140	ļ				
Copper Lead	12	850.	<del> </del>				
Lead	1	58					
Nickel		400	<u> </u>				
Zinc	1	1500	<b>↓</b>				
Arsenic	-		<del> </del>				
Selenium	-						
Silver	1	£16	<u> </u>				
Mercury	↓		<b></b>				
Iron Beryllium	<b>├</b>						
Beryllium	<del>  </del>						
Cyanide	1/	30	<u> </u>				
Calcium	1	· · · · · · · · · · · · · · · · · · ·					
Magnesium	<b>├</b>						
Sodium							
Potassium	<b></b>						
BARIUM	~		<u> </u>				
Comments: <u><i>LE</i></u>	Suct	s rejolte	=1 AS 67	ofs.			
CYANDE	HELL	I PAST E	PA HOL	DING TI	4F (30 4	pays)	
					<del></del>		
9/20/02 Mark							
Mark	1	~~					

# Orchard Hill Landfill Leachate Disposal Analytical Data October 16, 1986

		DATE OF SAN	MPLES			<del></del>
PARAMETERS	7/15/86	8/1/86	8/15/86	9/3/86	9/17/86	10/13/86 
COD (mg/L)	9,730	7,290	7,750	5,500	6,760	5,810
Cadmium (ug/L)	119	20	0.9	135	3	4.8
Copper (ug/L)	368	310	1,450	196	280	394
Lead (ug/L)	650	790	160	166	15	15
Silver (ug/L)	72	120	4.0	173	190	87
Amenable Cyanide (ug/L)	<10	<10	10	10	10	NR
PCB's (ug/L)	<0.1	<0.1	<0.1	<b>*</b> <50	<b>*</b> <50	NR
Methylene     Chloride (ug/L)	150	31	3.1	13	39	130
1,1-DCEA (ug/L)	<1	<1	3.0	4.6	8.7	3.1
1,2-DCEA (ug/L)	69	30	27	22	76	96
cis-1,2-DCE (ug/L)	77	36	35	18	49	62
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9	5.0
Benzene (ug/L)	19	15	8.4	7	15	63
Ethyl Benzene (ug/L)	24	21	19	18	20	76
Toluene (ug/L)	160	110	130	150	180	110
Styrene (ug/L)	1.2	<1	<1	11	<1	69
Xylenes (ug/L)	50	41	28	55	81	54
<del></del>	<del></del>		<del></del>		<del></del> '	<del></del> '

<sup>\* -</sup> Higher detection limit a result of change in sample matrix.

NR - indicates test for parameter not run

# Orchard Hill Landfill Leachate Disposal Analytical Data October 16, 1986

1		DATE OF SAN					
PARAMETERS !	7/15/86	8/1/86	8/15/86	9/3/86	9/17/86	10/13/86	11-6-86
COD (mg/L)	9,730	7,290	7,750	5,500	6,760	5,810	22,800
Cadmium (ug/L)	119	20	0.9	135	3	4.8	35
Copper (ug/L)	368	310	1,450	196	280	394	197
Lead (ug/L)	650	790	160	166	15	15	38.7
Silver (ug/L)	72	120	4.0	173	190	87	80
Amenable Cyanide (ug/L)	<10	<10	10	10	10	NR	NR
PCB's (ug/L)	<0.1	<0.1	<0.1	# <50	<b>*</b> <50	NR	NR
Methylene Chloride (ug/L)	150	31	3.1	13	39	130	7100
1,1-DCEA (ug/L)	<1	<1	3.0	4.6	8.7	3.1	<5
1,2-DCEA (ug/L)	69	30	27	22	76	96	450
cis-1,2-DCE (ug/L)	77	36	35	18	49	62	280
TCE (ug/L)	2.9	3.6	1.3	4.1	3.9	5.0	140
Benzene (ug/L)	19	15	8.4	7	15	63	<5
Ethyl Benzene (ug/L)	24	21	19	18	20	76	45
Toluene (ug/L)	160	110	130	150	180	110	45
Styrene (ug/L)	1.2	<1	<1	11	<1	69	<u> </u>
Kylenes (ug/L)	50	41	28	55	81	54	25

<sup>\* -</sup> Higher detection limit a result of change in sample matrix.

NR - indicates test for parameter not run

Tetrachloroetheylene 73	Bromo dichloro methane	62
	Tetrachloroethylen	73
Chlorobenzene 33		

(616) 381-9666

# ANALYTICAL REPORT

COMPANY : Orchard Hill Landfill

PROJECT CODE NO. : 861336

c/o 1936 Dorchester

DATE RECEIVED : 10-23-86

Kalamazoo, MI 49001

DATE REPORTED : 11- 3-86

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

METHOD : Standard Methods, or

TYPE OF SAMPLE(S): Leachate

equivalent.

RESULTS :

5,630

Cadmium, ug/L

3.6

Copper, ug/L

260

Lead, ug/L

COD, mg/L

28

Silver, ug/L

124

MDNR Scan 1 & 2

Refer to results attached

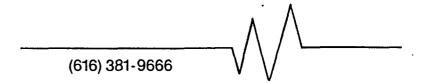
Respectfully submitted,

Man H. Bonna

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director



# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received: 10-23-86

Laboratory Code: 861336

Purchase Order #

Report Date : 11- 3-86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1 ·
Bromodichloromethane	<1	cis-1,2-Dichloroethene	32
Dibromochloromethane	<1	l,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	2.0
Methylene Chloride	61	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	1.2	Tetrachloroethene	<1
1,2-Dichloroethane	66	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	1.6

# SCAN 2 Purgeable Aromatic Hydrocarbons

Result			Result
Benzene	38	Styrene	45
Ethylbenzene	44	Xylenes	43
Toluene	77		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

	$\bigwedge$
(616) 381-9666	

# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 11- 6-86

Laboratory Code: 861433

Purchase Order #

Report Date :11-14-86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<5	trans-1,2-Dichloroethene	<5
Bromodichloromethane	62	cis-1,2-Dichloroethene	280
Dibromochloromethane	< 5	l,l,l-Trichloroethane	< 5
Chloroform	< 5	1,1,2-Trichloroethane	<5
Carbon Tetrachloride	<5	Trichloroethene	140
Methylene Chloride	7100	1,1,2,2-Tetrachloroethane	<5
l,l-Dichloroethane	<5	Tetrachloroethene	73
1,2-Dichloroethane	450	1,3-Dichloropropene	< 5
l,1-Dichloroethene	<5	Chlorobenzene	33

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	<b>&lt;</b> 5	Styrene	<b>&lt;</b> 5
Ethylbenzene	<5	Xylenes	<b>&lt;</b> 5
Toluene	<5		

High detection limit due to sample matrix.

Results are expressed as ug/L

< indicates not detected at the stated detection limit

(616) 381-9666

# ANALYTICAL REPORT

COMPANY : Orchard Hill Landfill

PROJECT CODE NO. : 861433

3378 Hennesey Rd.

DATE RECEIVED

: 11- 6-86

Watervliet, MI 49098

DATE REPORTED

: 11-14-86

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

: Standard Methods, or METHOD

equivalent.

TYPE OF SAMPLE(S): Leachate

RESULTS:

COD, mg/L

22,800

Cadmium, uq/L

35

Copper, ug/L

197

Lead, ug/L

38.7

Silver, ug/L

80

MDNR Scan 1 & 2

Refer to results attached

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

illian H. Bouma

Director

(616) 381-9666	

COMPANY : Orchard Hill Landfill

PROJECT CODE NO. : 861433

3378 Hennesey Rd.

DATE RECEIVED : 11- 6-86

Watervliet, MI 49098

DATE REPORTED : 11-14-86

ATTENTION: Mr. John Cook

equivalent.

PURCHASE ORDER NO.:

**METHOD** : Standard Methods, or

TYPE OF SAMPLE(S): Leachate \_\_

RESULTS

COD, mg/L 22,800

Cadmium, ug/L 35

Copper, ug/L 197

38.7 Lead, ug/L Silver, ug/L 80

MDNR Scan 1 & 2 Refer to results attached

> Respectfully submitted, KAR Laboratories, Inc.

> William H. Bouma, Ph.D.

Director



### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 11- 6-86

Laboratory Code: 861433

Purchase Order #

Report Date : 11-14-86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<5	trans-1,2-Dichloroethene	<b>&lt;</b> 5
Bromodichloromethane	62	cis-1,2-Dichloroethene	280
Dibromochloromethane	<5	1,1,1-Trichloroethane	<5
Chloroform	< 5	1,1,2-Trichloroethane	<5
Carbon Tetrachloride	< 5	Trichloroethene	140
Methylene Chloride	7100	1,1,2,2-Tetrachloroethane	<5
l,l-Dichloroethane	<5	Tetrachloroethene	73
1,2-Dichloroethane	450	1,3-Dichloropropene	<b>&lt;</b> 5
1,1-Dichloroethene	< 5	Chlorobenzene	33

# SCAN 2 Purgeable Aromatic Hydrocarbons

•	Result		<u>Result</u>
Benzene	<5	Styrene	<b>&lt;</b> 5
Ethylbenzene	<5	Xylenes	<5
Toluene	<b>&lt;</b> 5		

High detection limit due to sample matrix.

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

	$\bigwedge$
(616) 381-9666	

COMPANY : Orchard Hill Landfill PROJECT CODE NO.

: 861497

3378 Hennesey Rd.

DATE RECEIVED

: 11/19/86

Watervliet, MI 49098

DATE REPORTED

: \_11/25/86

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

: Standard Methods, or

equivalent.

COD, mg/L

RESULTS

**METHOD** 

24,800

Cadmium, ug/L

46

Copper, ug/L

280

TYPE OF SAMPLE(S): Leachate\_\_\_\_

Lead, ug/L

90

Silver, ug/L

1,100

DNR Scan 1 & 2

Refer to results

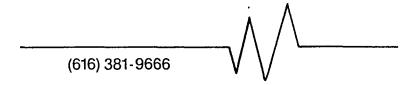
attached

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director



# ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 11/19/86

Laboratory Code: 861497

Purchase Order #

Report Date : 11/25/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate, 11/19/86

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	19	cis-1,2-Dichloroethene	350
Dibromochloromethane	<1	1,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	32
Carbon Tetrachloride	<1	Trichloroethene	66
Methylene Chloride	8500	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	5.5	Tetrachloroethene	32
1,2-Dichloroethane	3300%	1,3-Dichloropropene	<1
1,1-Dichloroethene	1.4	Chlorobenzene	180

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	190	Styrene	<1
Ethylbenzene	640	Xylenes	270
Toluene	970		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

	V. \
(616) 381-9666	

COMPANY : Orchard Hill Landfill

PROJECT CODE NO. : 861709

3378 Hennesey Road

DATE RECEIVED : 12-26-86

Watervliet, MI 49098

DATE REPORTED : 1-5-87

ATTENTION: Mr. John Cook

PURCHASE ORDER NO.:

: Standard Methods, or

TYPE OF SAMPLE(S): \_\_\_\_Leachate\_\_\_\_

equivalent.

RESULTS:

METHOD

COD, mg/L	21,000
Cadmium, ug/L	26
Copper, ug/L	245
Lead, ug/L	29

Silver, ug/L 305

DNR Scan 1 & 2 Refer to results attached

Respectfully submitted,

Mon H. Bound

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director



### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : 12-26-86

Laboratory Code: 861709

Purchase Order #

Report Date : 1-5-87

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate (12-26-86)

# SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	< 5	trans-1,2-Dichloroethene	<5
Bromodichloromethane	< 5	cis-1,2-Dichloroethene	680
Dibromochloromethane	< 5	l,1,1-Trichloroethane	< 5
Chloroform	<b>&lt;</b> 5	1,1,2-Trichloroethane	50
Carbon Tetrachloride	< 5	Trichloroethene	370
Methylene Chloride	6100	1,1,2,2-Tetrachloroethane	<5
l,l-Dichloroethane	5.5	Tetrachloroethene	57
1,2-Dichloroethane	600	1,3-Dichloropropene	< 5
l,l-Dichloroethene	<b>&lt;</b> 5	Chlorobenzene	21

# SCAN 2 Purgeable Aromatic Hydrocarbons

	Result			Result
Benzene	< 5	Styrene	•	15
Ethylbenzene	81	Xylenes		290
Toluene	720			

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed

# LANDFILL MANAGEMENT COMPANY

# 3378 Hennesey Road Watervliet, Michigan 49098 Phone (616) 463-5588

To facilitate a formal request to the wastewater treatment plant we have prepared the following summary of testing on the Orchard Hills Leachate between 1980 and \_\_\_\_\_\_

. J U J 9	
Chemical	Strength (Parts per Million)
COD.	1500 to 19000
TOC.	4 LO 6300
~Phenol.	6.3 to 1200
No3.	0.1 to 0.24
No <sub>2</sub> .	0.1 to 0.11
⊥ NH <sub>3</sub> .	0.1 to 150
Organic N.	88
KJEI N.	240
P.	10 to 2580
504.	0.1 to 640
BiCarb.	6300
Ca.	1100
MG.	28.6 to 300 ·
Na.	13.3 to 670 ·
, K.	, 310
Cr.	0.017 to 0.23
Cu.	0.08 to 0.12
Ni.	0.4 to 30
Pb.	0.05 to 0.36
Zn.	1.9 to 77
Fe.	3.1 to 630
As.	0.002 to 0.009
pH.	5.7 to 7.8
Specific Conductance	126 to 8600
SS.	340 to 480
TDS.	13000 to 14500
Ba.	0.7
BOD.	4900
Cn.	0.01 to 0.02
CaCO3.	124 to 5150 ·
, Hg. ⊤	0.005 to 0.05
Se.	0.002 to 0.005
Ag.	0.02
Ca	0.05 to 0.052

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08		, <u>C</u>			C	_											C	C	
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ESD-03201 REV.05/80

# ANATECH

7940 CASTLEWAY DRIVE INDIANAPOLIS, INDIANA 46250 (317) 842-4261

-		-		_	
С	ŧΙ	-	N	т.	٠
_	_	_			

South Side Landfill

c/o Mr. John Cook Jr.

Indianapolis, IN 46241

AIVAL 1313 NEPUN	ALYSIS REPO	PC	ΕP	R	S	SI	Y	Ľ	A	N	A
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SAMPLE RECEIVED: 10-16-84

SAMPLE COLLECTED BY: South Side

SAMPLE TYPE: X GRAB COMPOSITE

SAMPLE DESCRIPTION: WASTE WATER

WASTE MATERIAL

DRINKING WATER

OIL

X OTHER Monitor
ing Well

PO # Verbal SAMPLE I.D.: Orchard Hill
REPORT DATE 11-16-84 Landfill
ANATECH SAMPLE No.: 5698 SAMPLE DATE. 10-15-84

PARAMETER	ANALYSIS	UNITS	DATE ANALYZED	METHODOLOGY	ANALYST
Arsenic as As	<0.002	mg/L	11-5-84	206.3	DB
Barium as Ba	0.70	mg/L	10-23-84	208.1	DB
BOD, 5 Day	4900	mg/L	10-21-84	405.1	GD
Cadmium as Cd	<0.01	mg/L	10-23-84	213.1	DB
Chloride as Cl	2580	mg/L	10-22-84	407A	мвк
Chromium, Total as Cr	0.09	mg/L	10-23-84	218.1	DB
Copper as Cu	0.12	mg/L	10-23-84	220.1	DB
C Q D	>1500	mg/L	10-23-84	410.1	MBK
Cyanide, Total as CN	<0.02	mg/L	10-17-84	335.2	DB
Hardness, Total as CaCO	3080	mg/L	10-30-84	130.2	MBK
Iron, Total as Fe	101	mg/L	10-31-84	236.1	DB
Lead, as Pb	<0.05	mg/L	10-23-84	239.1	DB
Mercury as Hg	<0.0005	mg/L		245.1	DB
Nickel as Ni	0.25	ing/L	10-23-84	249.1	DB
Oil and Grease	<5.0	mg/L		413.1	GD

Remarks:

Data Reviewed By:	John	G.	Kane
Data Neviewed by.			



**/940 CASTLEWAY DRIVE** INDIANAPOLIS, INDIANA 46250 (317) 842-4261

P.O. # Verbal

CLIENT: South Side Landfill c/o Mr. John Cook Jr. Indianapolis, IN. 46241

ANATECH SAMPLE No. 5698

<b>ANALYSIS REPOR</b>
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SAMPLE RECEIVED:10-	16-84
SAMPLE COLLECTED BY:	
SAMPLE TYPE: X GR.	
SAMPLE DESCRIPTION:	·
	WASTE MATERIAL
	DRINKING WATER
,	OIL
X	OTHERMonitor-
	ing Well
SAMPLE I.D.: Orc	hard Hill
	dfill
	15-84
U: \!!!!   L	<del>~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~</del>

PARAMETER	ANALYSIS	UNITS	DATE ANALYZED	METHODOLOGY	ANALYST
рН	6.96		10-24-84	150.1	GD
Phenol	6.3	mg/L	11-9-84	420.1	KS
Phosphorous Total as P	<0.02	mg/L	10-30-84	365.3	мвк
Selenium as Se	<0.002	mg/L	11-5-84	270.3	DB
Silver as Ay	0.02	mg/L	10-23-84	272.1	DB
Solids, Dissolved	14,500	mg/L	10-31-84	160.1	DB
Solids, Suspended	340	mg/L			GD
Zinc as Zn	4.6	mg/L	10-23-84	289.1	DB
		••			

Remarks

NVIRONMENTAL SERVICES, INC. 146 SOUTH RIVER AVENUE HOLLAND, MICHIGAN 49423 PHONE 616-396-1209

TO:

Paw Paw Lake Area Wastewater Plant

4689 DeField Road

Coloma, Michigan 49038

Attn: T.C. Melville

BATEL -

October 10, 1984

ANALYGER:

or sludge.

CERTIFIED BY:

William G. Raugh

SAMPLING DATE:

Received from client on September 26, 1984.

RESULTS:

Expressed as milligrams per liter (mg/k) of sample as received.

EST #	SAMPLE I.D.	PARAMETER	CONCENTRATION
840974	#1352	Arsenic	<0.005 1.0
		Cạdmi un	0.05
		Chromium	0.12 2.0
1 1		Copper	0.10
		Lead	0.36
		Mercury	<0.0005
		Nickel	0.40 10.
		Selenium	<0.005
4		2inc	1.9 2.0
		Cyanide, Total	(0.02
		Phenols, Total	$(6.8) \qquad (6.3)$

WESTERN MICHIGAN ENVIRONMENTAL SERVICES, INC. 245 EAST LAKEWOOD BLVD. . HOLLAND, MI 49423-2066 PHONE 616-396-1209

TO:

Paw Paw Area Wastewater Treatment Plant

4689 DeField Road

Coloma, Michigan 49038

Attn: T. C. Melville

DATE:

May 16, 1985

ANALYSIS:

OF WASTEWATER

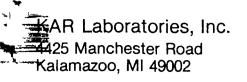
CERTIFIED BY:

SAMPLING DATE: Received from client on April 23, 1985.

RESULIS:

Expressed as milligrams per liter (mg/l) of sample as received.

ESI #	SAMPLE I.D.	PARAMETER	CONCENTRATION
850455	Orchard Hills	Cyanide, Total	<0.01 eA
		Phenol, Total	15.6 NO L'al 0.3
		Arsenic	0.0094 al
		Cadmium	0.052 🖟
		Chromium	0.017+A
		Copper	0.12 **
		Lead	<0.005 ok
		Mercury	<0.0010-4
		Nickel	1.7 AV WHIT 1-0
		Selenium	<0.005
		Zinc	77 no Limit 2.0



(616) 381-9666

Report Date: July 17, 1986

#### ANALYTICAL REPORT

To: Orchard Hill Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. John Cook, Jr.

49098 Laboratory Code: 86806

Re: Analysis of leachate sample submitted July 15, 1986.

	Leachate
COD, mg/L	9730
Cadmium, ug/L	119
Copper, ug/L	368
Lead, ug/L	650
Silver, ug/L	72
Cyanide, Amenable, ug/L	<10
MDNR Scan 1 & 2	See report attached
PCB's, ug/L	<0.1

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Illiam H Bouma

Director

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : July 15/86

Laboratory Code: 86806

Purchase Order #

Report Date : July 17/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate

#### SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	77
Dibromochloromethane	<1	l,l,l-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	2.9
Methylene Chloride	150	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	69	1,3-Dichloropropene	<1
1,1-Dichloroethene	<1	Chlorobenzene	<1

#### SCAN 2 Purgeable Aromatic Hydrocarbons

	Result		Result
Benzene	19	Styrene	1.2
Ethylbenzene	24	Xylenes	50
Toluene	160		

Results are expressed as ug/L < indicates not detected at th

< indicates not detected at the stated detection limit

--- indicates not analyzed

#### ANALYTICAL REPORT

To: Orchard Hills Landfill Report Date : 11/22/88

Date Received : 11/2/88
Laboratory Code: 882016

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample

<u>I.D.</u>: 11/1/88

#### SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Bromomethane	<1	cis-1,3~Dichloropropene	<1
Carbon Tetrachloride	<1	trans-1,3-Dichloropropene	<1
Chlorobenzene	<1	Methylene Chloride	280
Chloroethane	<1	1,1,2,2~Tetrachloroethane	<1
Chloroform	<1	Tetrachloroethen	7.2
Chloromethane	<1	1,1,1-Trichloroethane	<1
Dibromochloromethane	<1	1,1,2-Trichloroethane	5.9
1,1-Dichloroethane	30	Trichloroethene	19
1,2-Dichloroethane	110	Trichlorofluoromethane	<1
1,1-Dichloroethene	<1	Vinyl Chloride	<1
cis-1,2-Dichloroethene	120		

#### SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	34	m-and/or p-Xylene	160
Ethylbenzene	72	o-Xylene	60
Toluene	660		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

(616) 381-9666

# ANALYTICAL REPORT

To: Orchard Hill Landfill

3378 Hennesey Road Watervliet, MI 49098

Laboratory Code: 86806

Report Date: July 17, 1986

Attn: Mr. John Cook, Jr.

Re: Analysis of leachate sample submitted July 15, 1986.

Leachate
9730
119
368
650
72
<10
See report attached <0.1

Respectfully submitted, KAR Laboratories, Inc.

Illiam H. Bouma

William H. Bouma, Ph.D.

Director



#### ANALYTICAL REPORT

To: Orchard Hill Landfill

Date Received : July 15/86

Laboratory Code: 86806

Purchase Order #

Report Date : July 17/86

Re: VOLATILE HYDROCARBON ANALYSIS MICHIGAN DNR Scan 1 and Scan 2

Sample

Identification: Leachate

#### SCAN 1 Purgeable Halocarbons

	Result		Result
Bromoform	<1	trans-1,2-Dichloroethene	<1
Bromodichloromethane	<1	cis-1,2-Dichloroethene	77
Dibromochloromethane .	<1	1,1,1-Trichloroethane	<1
Chloroform	<1	1,1,2-Trichloroethane	<1
Carbon Tetrachloride	<1	Trichloroethene	2.9
Methylene Chloride	150	1,1,2,2-Tetrachloroethane	<1
l,l-Dichloroethane	<1	Tetrachloroethene	<1
1,2-Dichloroethane	69	1,3-Dichloropropene	<1
l,l-Dichloroethene	<1	Chlorobenzene	<1

## SCAN 2 Purgeable Aromatic Hydrocarbons

Result		Result	
Benzene	19	Styrene	1.2
Ethylbenzene	24	Xylenes	50
Toluene	160		

Results are expressed as ug/L < indicates not detected at the stated detection limit --- indicates not analyzed



. . . . .

ORCHAND HILL CANDERLE

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

c/o 1936 Dorchester

Kalamazoo, MI 49001

Date: April 19, 1988

Laboratory Code: 880625

Attn: Mr. John Cook

Re: Analysis of one leachate sample submitted April 12, 1988.

Sample I.D.: Leachate 4-12-88, 7:45 a.m.

	Concentration (mg/L)
COD	32,000
<u>Metals</u>	
Cadmium	0.04
Chromium	0.22
Copper	0.13
Lead	0.32
Silver	<0.01
DNR Scan 1 & 2	*

\*Refer to the results attached

Respectfully submitted,

KAR Laboratories, Inc.

2 Milliam H. Bouma, Ph.D.

Director

#### ANALYTICAL REPORT

To: Orchard Hills Landfill Report Date : 4-19-88

Date Received: 4-12-88

P.O. Number

Laboratory Code: 880625

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample

1.D.: Leachate 4-12-88, 7:45 a.m.

#### SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	1.4
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	<1
Chloroform	<1	Methylene Chloride	130
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	36	Tetrachloroethene	11
1,2-Dichloroethane	99	1,1,1-Trichloroethane	<1
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	6.2
cis-1,2-Dichloroethene	93	Trichloroethene	27

#### SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	51	m-and/or p-Xylene	190
Ethylbenzene	91	o-Xylene	78
Toluene	1100		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

orchard Hills Landfill 1936 Dorchester

Kalamazoo, MI 49001

Date: April 1, 1988

Laboratory Code: 880426

Attn: Mr. John Cook

Re: Analysis of one leachate sample obtained at 2:00 p.m. on 3/9/88

by Orchard Hills.

	Concentration (mg/L)
COD	42,000
Metals	
Cadmium	0.06
Chromium	0.34
Copper	0.15
Lead	0.28
Silver	<0.005

DNR Scan 1 & 2

Refer to attached report

4-4-88

Buo-

John Cook - ORCHARD HILL CANDFILL - 3ctfully submitted,

Dropped this off today. I gave him Laboratories, Inc.

Dropped this off today. I gave him Laboratories, Inc.

The O.K. - He wants to run these leain H. Bouma (WGR)

analyses less often (every 8-12 loads Lam H. Bouma, Ph.D.

Till talk toryou regarding this latter.

#### ANALYTICAL REPORT

To: Orchard Hills Landfill Report Date : 4/1/88

Date Received: 3/9/88

P.O. Number

Laboratory Code: 880426

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample

I.D.: 1 leachate sample obtained at 2:00 p.m., 3/9/88 by Orchard Hills

#### SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	· <1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	1.1	trans-1,3-Dichloropropene	<1
Chloroform	<1	Methylene Chloride	83
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	30	Tetrachloroethene	10
1,2-Dichloroethane	68	1,1,1-Trichloroethane	1.2
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	4.4
cis-1,2-Dichloroethene	63	Trichloroethene	20

#### SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	34	m-and/or p-Xylene	180
Ethylbenzene	77	o-Xylene	77
Toluene	800		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

---indicates not analyzed

# CONFIRMATION OF VERBAL CORRESPONDENCE

DATE: 9-2-88	[ ] TELEPHONE CONVERSATION
TIME: 925/Am	[ ] MEETING - LOCATION:
	KURP LIBERRY
TALKED WITH: TOHN Cook	
REPRESENTING: Orchard	Hic CMOFILE
SUBJECT: legal to disp	ove of more leachate ovided - see attached)
(WITH analyse pro	or acres of agracias
COMMENTS: We discusse.	of contaminated"
	Edispose dof at the
	till from the Portage Robe-Finish
Sife in the Late 19	70's & early 1980's Moca"
was the nigor conce	in. I said we would lest
a load of leaghate	for MOCH when it came in
	sa problem I doo said I
would try touth a	Parity the "hazardore waste"
guston with MDNR	
Mr Coch Stated that y	they have clare some silot plant theat system with Early result hat it is successful. We will kay as we find out more information
( New ary pry 5 pressural	were System wan. may result
who offer up to date.	as we find out more information
	and Hill Candfill
	E: Juliliffinger Jahren
SIGNATUR	E: //MALLAMINALANDS

(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

Date: August 30, 1988

1936 Dorchester

Kalamazoo, MI 49001

Laboratory Code: 881452-1

Attn: Mr. John Cook

Re: Analysis of one leachate sample submitted 8/12/88.

-1 <u>8/9/88</u>	Concentration (mg/L)
COD .	28,000
<u>Metals</u>	
Cadmium	0.08
Chromium	0.12
Copper	0.17
Lead	0.19
Silver	0.005

DNR Scan 1 & 2

Refer to attached report

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

#### ANALYTICAL REPORT

To: Orchard Hills Landfill Report Date : 8/30/88

Date Received: 8/12/88

P.O. Number

Laboratory Code: 881452-1

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample

I.D.: 8/9/88, Leachate sample

#### SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Carbon Tetrachloride	<1	cis-1,3-Dichloropropene	<1
Chlorobenzene	<1	trans-1,3-Dichloropropene	< 1
Chloroform	<1	Methylene Chloride	110
Dibromochloromethane	<1	1,1,2,2-Tetrachloroethane	<1
1,1-Dichloroethane	24	Tetrachloroethene	6.0
1,2-Dichloroethane	100	1,1,1-Trichloroethane	1.4
1,1-Dichloroethene	<1	1,1,2-Trichloroethane	12
cis-1,2-Dichloroethene	80	Trichloroethene	15

#### SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	54	m-and/or p-Xylene	190
Ethylbenzene	49	o-Xylene	73
Toluene	920		

Concentrations are expressed as ug/L

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

.

---indicates not analyzed

ecember 19,1866

2. 91 3. 56 4.310 5. 59 6. 17 1. 29 8, 3, 9 11. 11 13.29 15. 14 16. 26. 17. 28

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40. 21

4. 15

31.

19. 19 70. 300 21. 14 12 3 28. 2

13.136 21. 214 15. 30 16. 27

27. 22

6710.75ap 1.7 mg/l 25,400 kg 43,180 43.18 8 0.0067 6ALLION 3.785 kg/gad CASALARIS #1's / Lague loading



ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (816) 463-5588 • WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET ruce Merchant FROM:\_ NUMBER OF PAGES FOLLOWING THIS COVER \$HEET\_ TIME 2:15 FAX NUMBER 616-463-7133

Ø1002

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 902661 Client No.: 1208 Date Activated: 10/02/90 Date Promised: 10/23/90 Date Validated: 10/23/90 Date Reported: 10/23/90 PO#:

Project Desc.: Analysis of leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 902661. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

> William H. Bouma, Ph.D.

Director

WHB/sm

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 902661 Report Date: 10/23/90

Project Desc.: Analysis of leachate sample.

Sample No.:902661-01 Sample type: aqueous

Rec'd on: 10/02/90

ID: "Leachate, 10/2/90, 10:45"

COD	i	14,600	mg/L
MDNR Scan 1 & 2	See	attached	1.
Cyanide, total	;	0.02	ng/L
Cadmium, total		<0.005	ng/L
Chromium, total	i	0.13	mg/L
Copper, total	;	0.07	ng/L
Lead, total		0.032	ng/L
Mercury, total		<0.0005	ng/L
Nickel, total		0.38	mg/L
Silver, total	•	<0.005	ng/L
Zinc, total		0.52	ng/L

Unless otherwise noted, test results represent the sample(s) as they were received.

#### KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.: 902661 Report Date: 10/23/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 902661-01 Rec'd on: 10/02/90

Proj. Desc.: Analysis of leachate sample. Sample ID: "Leachate, 10/2/90, 10:45"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
<b>Bromomethane</b>	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND:	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.5	Methylene chloride	28
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND'	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	4.5	Trichloroethene	2.6
1,2-Dichloroethane	<i>52</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	37	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	16	m-and/or p-Xylene	210
Ethyl benzene	5 <b>8</b> ·	o-Xylene	83
Toluene	280	_ {	

Concentrations are expressed as ug/L.
"ND" means not detected. The limit of detection was 1
for all targets except Methylene chloride, which was 10

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hendesay Road Water 1121 FMI 49098

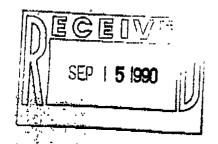
Attn: Mr. Jerry Miller

Proj. No.: 902332 Client No.: 1208 Date Activated: 8/24/90 Date Promised: 9/14/90 Date Validated: 9/14/90 Date Reported: 9/14/90 POF:

Project Desc.: Analysis of leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 902332. Please refer to this Project No. if you have any questions regarding this work.



Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/sm

345-357

ORCHARD HILL SANITARY LANDFILL
3378 HENNESY ROAD · PHONE (616) 463-5588 · WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER CHEET

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FAX NUMBER		1-38	5-81	g Z		
NUMBER OF P	AGES FO	LLOWING	THIS COV	ER SHEET_	3	
SENT BY	m	TI	1E /2:00	) DATE	10/3/9	, 20

616-463-7133

FAX NUMBER

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 902332 Report Date: 9/14/90

Project Desc.: Analysis of leachate sample.

Sample No.:902332-01 Rec'd on: 8/24/90

ID: "Leachate, 8/24/90, 10:00am"

COD		12,100	
MDNR Scan 1 & 2	See	attached	
Cyanide, total		0.31	mg/L
Cadmium, total		<0.01	mg/L
Chromium, total		0.08	mg/L
Copper, total		0.08	mg/L
Lead, total		<0.02	mg/L
Mercury, total		<0.0005	mg/L
Nickel, total		0.46	mg/L
Silver, total		<0.005	mg/L
Zinc, total		0.93	mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

« KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.: Report Date: 902332

**4** 004

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 902332-01 Rec'd on: 8/24/90

Proj. Desc.: Analysis of leachate sample. Sample ID: "Leachate, 8/24/90, 10:00am"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	44
Chloroethane	ND	1,1,2,2-Tetrachloroethane	2.2
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	3.9	Trichloroethene	1.1
1,2-Dichloroethane	<i>51</i> ,	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	25	-	

## SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	8.0	<i>m-and/or p-Xylene</i>	47
Ethyl benzene	23	o-Xylene	24
Toluene	160	-	

Concentrations are expressed as ug/L.
"ND" means not detected. The limit of detection was 1
for all targets except Methylene chloride, which was 10



#### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

TO: KAI WATER Reclaimation	_
ATTN: Bruce Merchant	_
FROM: J. Miller	
FAX NUMBER 385-3015	
NUMBER OF PAGES POLLOWING THIS COVER SHEET	
SENT BY J/M TIME//. 10 DATE_	12/11/90

FAX NUMBER 616-463-7133

Bruce, I have SUBmitteD SAMPLES for complete TCLP. PI will CONTACT you when They return.

J miller

were received. Unless officerebit topresent the sample(s) as they were received:

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TO: OLCUBER HITTE PRESETT

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KAM Leboratories, Inc.

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WHD/GHM

Director Boums, Ph.D. Jakon Hiller RAR Laboratories, Inu.

Attached you will tind test remults for project no. 903053. Pl this project no. If you have any quostions regarding this work. STANFIE STENES

Project Deco.: Analysis of one leadbate semple.

Attn: Mr. Jerry Miller

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8886-186 (818)

4425 Manchester Road Kalamazoo, MI 49002 KAR Laboratories, Inc.

THOM DITAGNAL .... RESTREEN BIOLD . OS: SI DENIST.

KAR Laboratories, Inc.

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To: Orchard Hills Landfill

Project No.: 903053 Report Date: 11/30/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 903053-01 Rec'd on: 11/09/90

Proj. Desc.: Analysis of one leachate sample.

Sample ID: "Leachate, 11/9/90, 11:30"

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	1.6	Methylene chloride	30
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	1.1
1,1-Dichloroethane	1.9	Trichloroethene .	1.2
1,2-Dichloroethane	67	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloríde	ND
cis-1.2-Dichloroethene	40	•	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benze <b>ne</b>	20	m-and/or p-Xylene		110
Ethyl benzene	38	o-Xylene		51
Toluene	180	_	•	

Concentrations are expressed as ug/L.
"ND" means not detected. The limit of detection was 1
for all targets except Methylene chloride, which was 10

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	$\wedge$
(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: 891045 Client No.: 1059 Project Date: 6/05/89

Date Promised: 6/26/89 Date Reported: 6/20/89

PO#:

Project Desc.: Analysis of one leachate sample

Sample No.: 891045-01 Rec'd on: 6/05/89

Sample ID: Orchard Hills, Leachate, 6/5/89

COD 22,000 mg/L

MDNR Scan 1 & 2 see attached

Cyanide, total 0.04 mg/L

Cadmium, total 0.013 mg/L

Chromium, total 0.12 mg/L

Copper, total 0.08 mg/L

Lead, total 0.102 mg/L

Mercury, total < 0.0005 mg/L

Nickel, total 0.71 mg/L

Silver, total < 0.005 mg/L

Zinc, total 26.4 mg/L

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D. Director

KAR Laboratories, Inc.

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Sample No.: 891045-01 Date Received: 6/05/89 Date Promised: 6/26/89 Date Reported: 6/20/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills, Leachate, 6/5/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	2.2	Methylene chloride	500
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	6.0
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	35	Trichloroethene	18
1,2-Dichloroethane	82	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	73		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	22	m-and/or p-Xylene	220
Ethyl benzene	79	o-Xylene	68
Toluene	630	-	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10 times higher.

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002 LAB Class-

(616) 381-9666

ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

Project No.: Client No.:

890863 1059 5/10/89

Project Date:
Date Promised:
Date Reported:

5/31/89 5/26/89

PO#:

Project Desc.: Analysis of one leachate sample.

Sample No.: 890863-01

Rec'd on: 5/10/89

Sample ID: Leachate, 5/10/89

COD

12,000 mg/L

MDNR Scan 1 & 2

see attached

Cyanide, total

0.15 mg/L

Cadmium, total

0.02 mg/L

Chromium, total

0.13 mg/L

Copper, total

0.11 mg/L

Lead, total

0.12 mg/L

Mercury, total

< 0.0005 mg/L

Nickel, total

1.04 mg/L

Silver, total

<0.005 mg/L

Zinc, total

54.1 mg/L

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

illiam H. Bonna

Director

To: Orchard Hills Landfill 3378 Hennesey Road

3378 Hennesey Road Date Received: 5/10/89 Watervliet, MI 49098 Date Promised: 5/31/89 Date Reported: 5/26/89

Sample No.: 890863-01

Attn: Mr. Don Batts

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Leachate, 5/10/89

#### SCAN 1 - Purgeable Halocarbons

ND	trans-1,2-Dichloroethene	ND
ND	1,2-Dichloropropane	ND
ND	cis-1,3-Dichloropropene	ND
ND	trans-1,3-Dichloropropene	ND
10	Methylene chloride	390
ND	1,1,2,2-Tetrachloroethane	ND
ND	Tetrachloroethene	19
ND	1,1,1-Trichloroethane	1.0
ИD	1,1,2-Trichloroethane	1.8
24	Trichloroethene	45
540	Trichlorofluoromethane	ND
ND	Vinyl chloride	ND
180	_	
	ND ND 10 ND ND ND ND ND ND ND ND ND ND ND ND ND	ND 1,2-Dichloropropane ND cis-1,3-Dichloropropene ND trans-1,3-Dichloropropene 10 Methylene chloride ND 1,1,2,2-Tetrachloroethane ND Tetrachloroethene ND 1,1,1-Trichloroethane ND 1,1,2-Trichloroethane 24 Trichloroethene 540 Trichlorofluoromethane ND Vinyl chloride

# SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	39	m-and/or p-Xylene	410
Ethyl benzene	160	o-Xylene	180
Toluene	960		

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10 times higher.

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

	$\wedge$ $\wedge$
(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Project No.: Client No.: Project Date:

890669 1059 4/14/89

Date Promised:

4/14/89 5/05/89

Date Reported:

5/05/89

Project Desc.: Analysis of one leachate.

Sample No.: 890669-01 Rec'd on: 4/14/89

Sample ID: Orchard Hills leachate, 4/14/89

COD 21,000 mg/L

MDNR Scan 1 & 2 see attached

Cyanide, total 0.09 mg/L

Cadmium, total 0.023 mg/L

Chromium, total 0.32 mg/L

Copper, total 0.10 mg/L

Lead, total 0.11 mg/L

Mercury, total <0.0005 mg/L

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Nickel, total 0.94 mg/L

Silver, total <0.005 mg/L

Zinc, total 38.3 mg/L

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

illian H. Bouma

Director

WHB/mcr

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Sample No.: 890669-01 Date Received: 4/14/89 Date Promised: 5/05/89 Date Reported: 5/04/89

Attn: Mr. John Cook

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample ID: Orchard Hills leachate, 4/14/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	2.8
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	9.2	Methylene chloride	920
Chloroethane	ND	1,1,2,2-Tetrachloroethane	. ND
Chloroform	ND	Tetrachloroethene	16
Chloromethane	ND	1,1,1-Trichloroethane	1.2
Dibromochloromethane	ND	1,1,2-Trichloroethane	2.5
1,1-Dichloroethane	81	Trichloroethene	3.5
1,2-Dichloroethane	310	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	170	<del>-</del>	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	43	m-and/or p-Xylene	310
Ethyl benzene	140	o-Xylene	130
Toluene	1200	-	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10 times higher.



Zinc, total

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Project No.: 890449
Client No.: 1059
Project Date: 3/16/89
Date Promised: 4/06/89

4/04/89

Date Reported: PO#:

Project Description: Analysis of one leachate sample

Sample: 890449-01 Leachate 3/16/89 Rec'd: 3/16/89

40.9 mg/L

COD 22,000 mg/L

MDNR Scan 1 & 2 see attached MOCA <100 ug/L

PCB <1 ug/L

Cyanide, total 0.07 mg/L

 Cadmium, total
 0.02 mg/L

 Chromium, total
 0.29 mg/L

 Copper, total
 0.11 mg/L

 Lead, total
 0.19 mg/L

 Mercury, total
 <0.0005 mg/L</td>

 Nickel, total
 1.10 mg/L

 Silver, total
 <0.005 mg/L</td>

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Sample No.: 890449-01 Date Received: 3/16/89 Date Promised: 4/06/89 Date Reported: 4/04/89

Attn: Mr. John Cook

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample Description: Leachate 3/16/89

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	1.0
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	10	Methylene chloride	540
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	19
Chloromethane	ND	1,1,1-Trichloroethane	8.4
Dibromochloromethane	ND	1,1,2-Trichloroethane	1.6
1,1-Dichloroethane	59	Trichloroethene	36
1,2-Dichloroethane	250	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	150		

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	32	m-and/or p-Xylene	280
Ethyl benzene	150	o-Xylene	150
Toluene	1100	-	

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chloride, which was 10 times higher.

	<b>↑</b>
(616) 381-9666	

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Project No.: 890202 Client No.: 1059 Project Date: 2/02/89

Date Promised: 2/10/89
Date Reported: 2/10/8)

PO#:

Project Description: 1 leachate sample

Sample: 890202-01 Orchard Hills, 2/2/89 Rec'd: 2/02/89

COD 12,000 mg/L

MDNR Scan 1 & 2 see attached

MOCA <100 ug/L

PCB <0.1 ug/L

Cyanide, total 0.06 mg/L

Cadmium, total 0.028 mg/L

Chromium, total 0.30 mg/L

Copper, total 0.12 mg/L

Lead, total 0.095 mg/L

Mercury, total <0.0005 m///L

Nickel, total 0.72 mg/L

Silver, total <0.005 mg/L

Zinc, total 36.1 mg/L

Respectfully submitted,

WAR Laboratories, Inc.

'Illiam H. Bouma, Ph.D.

Minm H. Bouma

irector

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cook

Sample No.: 890202-01 Date Received: 2/02/89

Date Received: 2/02/89
Date Promised: 2/10/89
Date Reported: 2/10/89

Re: VOLATILE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample Description: Orchard Hills, 2/2/89, leachate

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	2.8
Bromoform	ND	1,2-Dichloropropane	2.3
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	truns-1,3-Dichloropropene	ND
Chlorobenzene	8.9	Methylene chloride	390
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	32
Chloromethane	ND	1,1,1-Trichloroethane	4.7
Dibromochloromethane	ND	1,1,2-Trichloroethane	7.1
1,1-Dichloroethane	29	Trichloroethene	46
1,2-Dichloroethane	260	Trichtorofluoromethane	ND
1,1-Dichloroethene	ND	Viny: thloride	ND
cis-1,2-Dichloroethene	220	•	

SCAN 2 - Purgeable Arapatic Hydrocarbons

Benzene	53	m' or p-Xylene	230
Ethyl benzene	130	0-/ '0	100
Toluene	580		

Concentrations are expressed as ug/L "ND" means not detected. The limit of detection was 1 for all compounds except Methylene chlorids, which was 10 times higher.

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

1936 Dorchester

Kalamazoo, MI 49001

Date: January 5, 1989

Laboratory Code: 882324

Attn: Mr. John Cook

Re: Analysis of one leachate sample submitted 12/20/88.

12/20/88	$\frac{\texttt{Concentration}}{(\texttt{mg/L})}$
COD	21,000
Metals	
Cadmium	0.07
Chromium	0.17
Copper	0.19
Lead	0.17
Silver	<0.005

MDNR Scan 1 & 2

Refer to attached report.

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

1 .

#### ANALYTICAL REPORT

To: Orchard Hills Landfill Report Date : 1/5/89

Date Received : 12/29/88

Laboratory Code: 882324

Re: VOLATILE HYDROCARBON ANALYSIS-MICHIGAN DNR Scan 1 and Scan 2

Sample

I.D.: 12/20/88

### SCAN 1-Purgeable Halocarbons

	CONC.		CONC.
Bromodichloromethane	<1	trans-1,2-Dichloroethene	<1
Bromoform	<1	1,2-Dichloropropane	<1
Bromomethane	<1	cis-1,3-Dichloropropene	<1
Carbon Tetrachloride	<1	trans-1,3-Dichloropropene	<1
Chlorobenzene	8.0	Methylene Chloride	330
Chloroethane	<1	1,1,2,2-Tetrachloroethane	<1
Chloroform	<1	Tetrachloroethene	16
Chloromethane	<1	1,1,1-Trichloroethane	3.6
Dibromochloromethane	<1	1,1,2-Trichloroethane	18
1,1-Dichloroethane	21	Trichloroethene	28
1,2-Dichloroethane	340	Trichlorofluoromethane	<1
1,1-Dichloroethene	<1	Vinyl Chloride	10
cis-1,2-Dichloroethene	240		

#### SCAN 2-Purgeable Aromatic Hydrocarbons

	CONC.		CONC.
Benzene	82	m-and/or p-Xylene	330
Ethylbenzene	140	o-Xylene	120
Toluene	990		

Concentrations are expressed as ug/L.

"<" indicates not detected at the stated detection limit

Method: U.S. EPA Method 502.2 "Volatile Organic Compounds in Water by Purge & Trap Capillary Column Gas Chromatography with Photoionization and Electrolytic Conductivity Detectors in Series", Sept. 1986.

(616) 381-9666

#### ANALYTICAL REPORT

To;

Orchard Hills Landfill 1936 Dorchester

Kalamazoo, MI 49001

Attn: Mr. John Cock

Date: November 22, 1988

Laboratory Code: 882016

Re: Analysis of one leachate sample submitted 11/2/88.

11/1/88	<u>Concentration</u> (mg/L)
COD	29,000
<u>Metals</u>	
Cadmium	<0.005
Chromium	0.20
Copper	0.38
Lead	0.12
Silver	<0.005

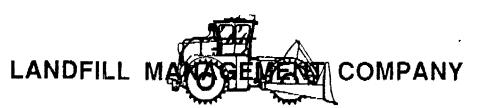
DNR Scan 1 & 2 Refer to attached report

Respectfully submitted,

KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director



### ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

TO:	KAL W W Treatment	
ATTN:	Bruce Merchant	
FROM:	Jerry Miller	
FAX NUMBER	385-8182	
NUMBER OF PAGE	s following this cover sheet 3	
sent by <u>J/m</u>	TIME 3:00 DATE 7/16/9	90

FAX NUMBER 616-463-7133

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, Mi 49002

15:01

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'133

07/16/90

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 901460 Client No.: 1208 Date Activated: 5/23/90 Date Promised: 6/13/90 Date Validated: 6/13/90 Date Reported: 6/13/90

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 901460. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

> William H. Bouma, Ph.D.

Director

WHB/kb

7 322

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 901460 Report Date: 6/13/90

Project Desc.: Analysis of one leachate sample.

Sample No.:901460-01 Rec'd on: 5/23/90

ID: Orchard Hills Leachate, 5/23/90

COD 7000 mg/L MBAS 0.5 mg/LOil and grease 3 mg/LMDNR Scan 1 & 2 See attached Cyanide, total 0.04 mg/L Cadmium, total <0.01 mg/L Chromium, total 0.11 mg/L Copper, total 0.05 mg/L Lead, total 0.012 mg/L Mercury, total <0.0005 mg/L Nickel, total 0.36 mg/L Silver, total 0.005 mg/L Zinc, total 0.38 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.:

901460

@ 004

Report Date:

6/13/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 901460-01 Rec'd on: 5/23/90

Proj. Desc.: Analysis of one leachate sample. Sample ID: Orchard Hills Leachate, 5/23/90

### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	พร้
Bromoform	ND	1,2-Dichloropropane	ر
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	120
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloro <b>for</b> m	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	5.6	Trichloroethene	2.4
1,2-Dichloroethane	<i>56</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	65	-	

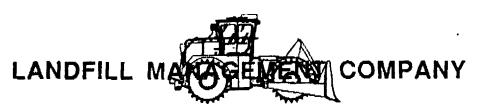
#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	20	m-and/or p-Xylene	190
Ethyl benzene	69	o-Xylene	130
Toluene	550	<b>-</b>	

Concentrations are expressed as ug/L.
"ND" means not detected. The limit of detection was 1
for all targets except Methylene chloride, which was 10

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☎616 4°°7133



# ORCHARD HILL SANITARY LANDFILL 3378 HENNESY ROAD - PHONE (616) 463-5588 - WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

TO:	Kal	Water	Reclai	m
ATTN :	Bruc	« Merc	hant	
FROM:	J	miller		<del></del>
FAX NUMBER	38,	= 8183	<u></u>	
NUMBER OF PAGE	s Follow	ING THIS CO	JER SHEET_	3
SENT BY J/M	_	TIME //.'4	O DATE	6/18/97

FAX NUMBER 616-463-7133

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KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Don Batts

Proj. No.: 901253
Client No.: 1059
Date Activated: 5/01/90
Date Promised: 5/22/90
Date Validated: 5/22/90
Date Reported: 5/22/90

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 901253. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma (WER)

William H. Bouma, Ph.D. Director

WHB/mcr

297,309

Page 1

KAR Laboratories, Inc.

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 901253

Report Date: 5/22/90

Project Desc.: Analysis of one leachate sample.

Sample No.:901253-01 Rec'd on: 5/01/90

ID: Orchard Hills, Leachate 5/1/90

BOD 11,000 mg/L COD 11,700 mg/L Chloride 13,472 mg/L Nitrogen, ammonia 780 mg/L -Nitrogen, nitrate 105 mg/L -Nitrogen, nitrite <0.1 mg/LPhosphate, ortho (as PO4) <0.02 mg/L MDNR Scan 1 & 2 See attached Cyanide, total <0.02 mg/L O'l and grease 10 mg/L imium, total < 0.05 mg/LChromium, total 0.13 mg/L Copper, total 0.12 mg/LLead, total 0.030 mg/L Mercury, total < 0.0005 mg/LNickel, total 0.48 mg/L Silver, total 0.007 mg/L Zinc, total 0.82 mg/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.: 901253
Report Date: 5/22/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 901253-01 Rec'd on: 5/01/90

Proj. Desc.: Analysis of one leachate sample. Sample ID: Orchard Hills, Leachate 5/1/90

#### SCAN 1 - Purgeable Halocarbons

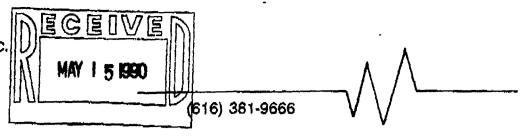
Bromodichloromethane	ND	trans-1,2-Dichloroethene	1.6
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	<i>530</i>
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	NĎ
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	20	Trichloroethene	6.7
1,2-Dichloroethane	<i>150</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloriđe	ND
cis-1,2-Dichloroethene	250	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	49	m-and/or p-Xylene	340
Ethyl benzene	140	o-Xylene	210
Toluene	890	•	

Concentrations are expressed as ug/L.
"ND" means not detected. The limit of detection was 1
for all targets except Methylene chloride, which was 10

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 901199 Client No.: 1208 Date Activated: 4/24/90 Date Promised: 5/15/90 Date Validated: 5/12/90 Date Reported: 5/14/90

· CITY - KALAMAZOO

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

Attached you will find test results for Project No. 901199. Please refer to this Project No. if you have any questions regarding this work.

> Respectfully submitted, KAR Laboratories, Inc.

> William H. Bouma, Ph.D.

Man H. Bouma

Director

WHB/kb

LANDFILL MCMT --- CITY - KALAMAZUU #5000

05/22/90 16:39 **5**616 4637133

KAR Laboratories, Inc.

Page 1

# ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 901199 Report Date: 5/14/90

Project Desc.: Analysis of one leachate sample.

Sample No.:901199-01 Rec'd on: 4/24/90 ID: Orchard Hills Leachate, 4/24/90

10,700 mg/L COD See attached MDNR Scan 1 & 2 <0.02 mg/L Cyanide, total <0.005 mg/L Cadmium, total 0.04 mg/L Chromium, total 0.05 mg/L Copper, total 0.038 mg/L Lead, total <0.0005 mg/L Mercury, total Nickel, total Silver, total 0.30 mg/L <0.005~mg/L0.40 mg/L zinc, total

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.: 901199 Report Date: 5/14/90

## PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 901199-01 Rec'd on: 4/24/90

Sample ID: Orchard Hills Leachate, 4/24/90

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	420
Chloroethane	ND	1,1,2,2-Tetrachluroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trick proethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	16	Trichloroethene	6.8
1,2-Dichloroethane	110	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1.2-Dichloroethene	350	•	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzen <b>e</b>	65	m-and/or p-Xylene	470
Ethyl benzene	190	o-Xylene	230
Toluene	1300	•	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 5 for all targets except Methylene chloride, which was 50

**5**616 4007133



# ORCHARD HILL SANITARY LANDFILL 3376 HENNESY ROAD . PHONE (616) 463-5588 . WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

TO:	KAL WATER ReclAnistrow
ATTN :	Bruce Muchart
FROM:	Jarry Miller
FAX NUMBER	385-8/82
Number of Pages	FOLLOWING THIS COVER SHEET S
BENT BY JM	TIME 2:31 DATE 4/30/90

FAX NUMBER 616-463-7133

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002



### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road Watervliet, MI 49098

Attn: Mr. Don Batts

901035 Proj. No.: Client No.: 1059 Date Activated: 4/06/90 Date Promised: 4/27/90 Date Validated: 4/26/90 4/27/90 Date Reported:

PO#:

Project Desc.: Analysis of one leachate sample.

2010 4F7/133

#### Dear Client:

Attached you will find test results for Project No. 901035. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/1k

273 - 285

· Page 1

--- CITY - KALAMAZOO

KAR Laboratories, Inc.

# ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 901035 Report Date: 4/27/90

Project Desc.: Analysis of one leachate sample.

Sample No.:901035-01 Rec'd on: 4/06/90

ID: Orchard Hills Leachate, 4/6/90

g/L
•
g/L
g/L
g/L
1g/L
g/L
g/L
g/L
g/L
g/L

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.: 901035 Report Date: 4/27/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 901035-01 Rec'd on: 4/06/90

Sample ID: Orchard Hills Leachate, 4/6/90

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	<b>N</b> D
Bromomethane	ND	cis-1,3-Dichloropropene	<b>N</b> D
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	ND
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	ND	Trichloroethene	ND
1,2-Dichloroethane	1.2	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	ND	•	

### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	ND	m-and/or p-Xylene	ND
Ethyl benzene	ND	o-Xylene	ND
Toluene	1.9	<del>-</del>	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10

\* CITY - KALAMAZOO



# ORCHARD HILL SANITARY LANDFILL

3378 HENNESY ROAD • PHONE (616) 463-5588 • WATERVLIET, MICHIGAN 49098

FAX MESSAGE COVER SHEET

TO: Bruc	e Merchant	
ATTN:		<u> </u>
FROM: Jer	y Miller	
FAX NUMBER	385-8182	
NUMBER OF PAGES	FOLLOWING THIS COVER SHEET	3
SENT BY	TIME 1/:00 DAT	E 4/4/90
/		11/

FAX NUMBER 616-463-7133

LANDFILL MGMT --- CITY - KALAMAZOO 🕻

04/04/90 11:11 2616 4637133

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002

(616) 381-9666

#### ANALYTICAL REPORT

To: Orchard Hills Landfill

3378 Hennesey Road

Watervliet, MI 49098

Attn: Mr. Jerry Miller

Proj. No.: 900694 Client No.: 1208

Date Activated: 3/07/90 Date Promised: 3/28/90 Date Validated: 3/28/90

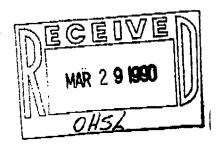
Date Reported: 3/28/90

PO#:

Project Desc.: Analysis of one leachate sample.

Dear Client:

Attached you will find test results for Project No. 900694. Please refer to this Project No. if you have any questions regarding this work.



Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcr

261-

KAR Laboratories, Inc.

Page 1

### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 900694 Report Date: 3/28/90

Project Desc.: Analysis of one leachate sample.

Sample No.:900694-01 Rec'd on: 3/07/90

ID: Orchard Hills Leachate, 3/7/90

9000	mg/L
attached	
<0.02	mg/L
<0.05	mg/L
0.04	mg/L
0.04	mg/L
0.022	mg/L
<0.0005	mg/L
0.30	mg/L
<0.005	mg/L
0.56	mg/L
	e attached <0.02 <0.05 0.04 0.022 <0.0005 0.30 <0.005

Unless otherwise noted, test results represent the sample(s) as they were received.

04/04/90 11:12 ☎616 4^ 7133 LANDFILL MGMT > CITY - KALAMAZOO 2004

KAR Laboratories, Inc.

7

To: Orchard Hills Landfill Project No.: 900694
Report Date: 3/28/90

# PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 900694-01 Rec'd on: 3/07/90

Sample ID: Orchard Hills Leachate, 3/7/90

#### SCAN 1 - Purgeable Halocarbons

Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	3.2	Methylene chloride	200
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	2.2
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromo <b>chloromethane</b>	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	19	Trichloroethene	8.6
1,2-Dichloroethane	99	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	140	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	<i>35</i>	<i>m-and/or p-Xylene</i>	210
Ethyl benzene	78	o-Xylene	8 <i>2</i>
Toluene	<i>570</i>	-	

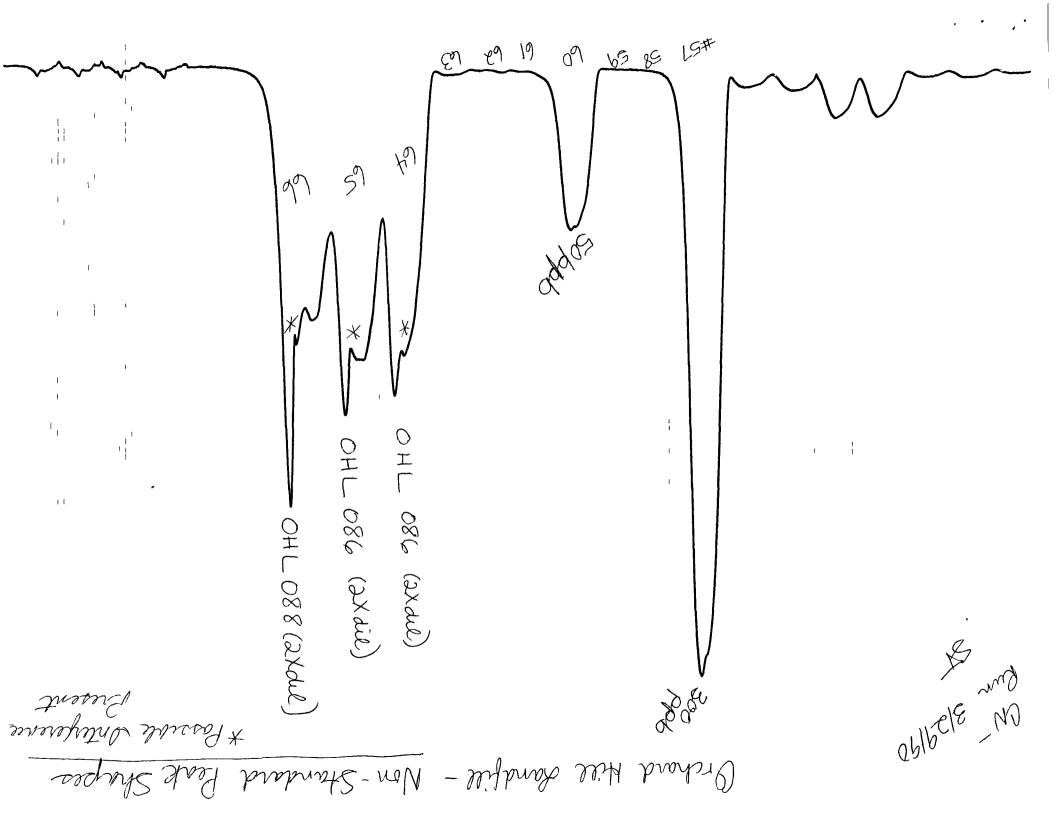
Concentrations are expressed as ug/L.
"ND" means not detected. The limit of detection was 1
for all targets except Methylene chloride, which was 10

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES 5895 No SAMPLERS: PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 616-385-8157 ono DATE/TIME G D ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION 0 SAMPLE I.D. NUMBER NUMBER OF CONTAINER М М & REMARKS В Ε OHL ORCHARD Hill AM Cloudy 10:45 Landfill 09290 ORCHARD HILL OHL RECEIVED BY: (Signature) 11 09290 Land fill RECEIVED (Signature) DATE/TIME ΒΥ: ₩. 3 RELINQUISHED F (Signature) GENERAL/CONVENTIONAL RESULT ORGANIC COMPOUNDS RESULT RESULT TRACE METALS Grah CADMIUM **EPA METHOD 601** pΗ TOTAL CHROMIUM BOD HEX. CHROME CBOD COD COPPER LEAD TSS VSS NICKEL ZINC **EPA METHOD 602** NH<sub>3</sub>-N TOTAL P SILVER ORTHO P MERCURY GREASE/OIL **BERYLLIUM** CHLORIDE BARIUM REMARKS RELINQUISHED **CN - TOTAL CN - AMENABLE** OTHER

		AMAZOO		CHA	N OF	CUSTO	Y REC	ORD A	4ND	LAB	ANALYS	SIS RE	PORT FORM		
1415 N	Harrison azoo, Mich	T OF PUBLIC UTILIT ugan 49007	IES	SAMPLE (Signatu	re) $P$	sen 2	- 00 (		PUF		of analysis	0  m = 0	ina	No	$\begin{array}{c} 5872 \\ \end{array}$
ΤI	EM MBER	SAMPLE I.D.	NUN	MPLE MBER	NUMBI OF CO	ER & SIZE NTAINER	D A T E	T I M E	C O M P	G R A B	SAMPLE	LOCATION & REMA	N, DESCRIPTION ARKS	DATE/TIME	DATE/TIME
	(	OPCHARD HILL LANDFUL	OHL	8690	One	- IL	3/27/90	10:30%		H	SCALES/C	DUDY, B	Rown/G40		
(	ュ	ORCHARD HUL LANDFILL	OH.	8690	One	-500ml	367/90	10:30 <sup>A</sup> /M		H	u /	u	/ CN-	RECEIVED BY (Signature)	RECEIVED BY (Signature)
														DATE/TIME   6	DATE/TIME R
GENI	ERAL/CO	ONVENTIONAL	RES	ULT TR	ACE MET	ALS	RES	ULT ORG	ANIC	СОМРО	DUNDS RES	SULT		TIME 3  (Signature)	TIME 4  RELINGUISHED BY  Signature)
	pН				CADMIU	M			EPA M	ETHOD 6	601			DATE/TIME Sol 11/28	DATE/TIME 3/2/3 40 1/6/2/1/3
	BOD		·····		TOTAL C	HROMIUM									
	CBOD				HEX CH	ROME								> /2	Z Z
	COD				COPPER									RECEIVED BY (Signature)	19 g . Z
	TSS				LEAD									mate V	1 2 2 2 1
	vss				NICKEL									(Sig	RECEIV (Signat
	NH3 N				ZINC				EPA M	ETHOD 6	802			/TIME	S'S S
	TOTAL P				SILVER										
	ORTHO F	o 			MERCU	RY								DATE.	DATE!
X	GREASE	OIL 356.	mall		BERYLL	UM				<del> </del>					
	CHLORIC			<u></u>	BARIUM									ED BY	3 E S
X	CN TOT	AL X168 DE	طد									A R.		SH	SHED I
	CN AME				-				OTHER	3		REMARKS		ELINOUISHE	Signature)
orm 101	<del>, }</del>	See Chart- pe	ossibl	e Inti	Erferen	ices		L	L					- # S	72 H S

1. Wright 4-10 = 90

	azoo, Michigan 49007 5-8157	(Signatu	Nuen -	Sone	<u> </u>		Special	Sample	<u> </u>
	SAMPLE I.D.	SAMPLE NUMBER	NUMBER & SIZE OF CONTAINER	D A T E	Г   М Е	C O M P	R SAMPLE A B	LOCATION, DESCRIPTION & REMARKS	DATE/TIME
	ORCHARD HILL	08890	ONE - IL	3/29/90	10:20 A		m  /	Cloudy, GED	<u> </u>
é	1000 1100 od 14'11	08890	ONE -500ml	13/	10:20g		H SCAIR	" " / CN-	RECEIVED BY:
									<b> </b>
									DATE/TIME
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									3 RELINQUISH (Signature)
GENE	ERAL/CONVENTIONAL	RESULT TR	ACE METALS	RESL	ORG	iANIC C	OMPOUNDS RES	SULT	DATE/TIME S
	pH		CADMIUM			EPA ME	THOD 601		2 W/2 /2
			T T T T T T T T T T T T T T T T T T T		11	1		)	.   \
	BOD		TOTAL CHROMIUM					·············	) 'É
	CBOD		HEX. CHROME						5 E
	CBOD		HEX. CHROME COPPER						tive of the control o
	CBOD		HEX. CHROME						tive of the control o
	CBOD COD TSS		HEX. CHROME  COPPER  LEAD			EPA ME	THOD 602	309	E RECEIVED 15-(Signature)
	CBOD COD TSS VSS		HEX. CHROME  COPPER  LEAD  NICKEL			EPA ME	FHOD 602	7.309	ETTIME RECEIVED  11:25 (Signature)  AM MOON
	CBOD COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P		HEX. CHROME  COPPER  LEAD  NICKEL  ZINC			EPA ME	THOD 602	7.30%	ETTIME RECEIVED  11:25 (Signature)  AM MOON
×	CBOD COD TSS VSS NH <sub>3</sub> -N TOTAL P ORTHO P GREASE/OIL 4/2, m	3/2	HEX. CHROME  COPPER  LEAD  NICKEL  ZINC  SILVER			EPA ME	FHOD 602	7.3090	DATE/TIME RECEIVED    11.25 (Signature)
×	CBOD COD TSS VSS NH <sub>3</sub> ·N TOTAL P ORTHO P GREASE/OIL CHLORIDE	/	HEX. CHROME  COPPER  LEAD  NICKEL  ZINC  SILVER  MERCURY			EPA ME	FHOD 602	\frac{1}{2}	DATE/TIME RECEIVED    11.25 (Signature)
× ×	CBOD  COD  TSS  VSS  NH <sub>3</sub> -N  TOTAL P  ORTHO P  GREASE/OIL  CHLORIDE  CN - TOTAL  # 233, PA	/	HEX. CHROME  COPPER  LEAD  NICKEL  ZINC  SILVER  MERCURY  BERYLLIUM				THOD 602	\frac{1}{2}	DATE/TIME RECEIVED    11.25 (Signature)
× ×	CBOD COD TSS VSS NH <sub>3</sub> ·N TOTAL P ORTHO P GREASE/OIL CHLORIDE	ob	HEX. CHROME  COPPER  LEAD  NICKEL  ZINC  SILVER  MERCURY  BERYLLIUM  BARIUM			EPA ME	FHOD 602	REMARKS:	ETTIME RECEIVED  11:25 (Signature)  AM MOON



### GREASE AND OIL, FREON EXTRACTION Gravimetric Method

Date	Analyzed	3-29-90

Sample ID # OHLO8690

Analyst\_\_\_\_\_\_\_

Gms. Flask+Residue	130.4024			
Gms. Flask U	130.0851			
Gms. G & O	0.3173	X 1000	= 317.3	Mgs.
Sample Volume in mLs	890	÷ 1000	= ,890	L.
Mgs/Volume in L.	317.3/.890	= 356	ng/L G & O	



Date Analyzed 4-9-95 Sample ID # OHL08890

Gms. Flask+Residue	109.1234					
Gms. Flask	103.7586					
Gms. G & O	0.3648	X 1000	= 364.8	Mgs.		
Sample Volume in mLs	885	÷ 1000	= .885	L.		
Mgs/Volume in L.	364.8/,885	= 412.2 mg/L G & O				



Date Analyzed 4-9-90

Sample ID # 014L09290

Gms. Flask+Residue	130.4460			
Gms. Flask U.	130.0744	•		
Gms. G & O	0.3716	:X::1000:: · · ·	= 371.6	Mgs.
Sample Volume in mLs	916	÷ 1000	= .910	L.
Mgs/Volume in L.	371.6/910	= 468.4	mg/L G & O	



# SAMPLING RESULTS FROM ORCHARD HILLS LANDFILL FROM 3/5/90

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
1,1-DICHLOROETHANE	14.000		ug/l	03/05/90	GRAB '	Ø2:25 PM
Mean	14.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
1,2-DICHLOROETHANE	140.000	-	ug/l	03/05/90	GRAB	Ø2:25 PM
Mean	140.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
AMMONIA-NITROGEN	466.000	_	mg/l	03/05/90	GRAB	Ø2:25 PM
Mean	466.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
BENZENE	43.000	_	ug/l	03/05/90	GRAB	02:25 PM
Mean	43.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
BOD	1560.000	_	mg/l	03/05/90	GRAB	02:25 PM
Mean	1560.000					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
CADMIUM	1.000	_	ug/l	03/05/90	GRAB	02:25 PM
Mean	1.000					
parameter	VALUE	_	Units		Sample Type	Sample Time
CHROMIUM	28.000	_	ug/l		GRAB	02:25 PM
Mean	28.000					
parameter	VALUE	_	Units		Sample Type	Sample Time
CIS-1, 2-DICHLOROETHE	250.000	-	ug/l	03/05/90		02:25 PM
Mean	250.000					

<sup>\*</sup> indicates test results below detection limits

### SAMPLING RESULTS FROM ORCHARD HILLS LANDFILL FROM 3/5/90

parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
COD	10496.000	_	mg/l	03/05/90	GRAB '	02:25 PM
Mean	10496.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
COPPER	41.000	-	ug/l	03/05/90	GRAB	02:25 PM
Mean	41.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
CYANIDES	276.000	-	ug/l	03/05/90	GRAB	02:25 PM
Mean	276.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
ETHYLBENZENE	130.000	_	ug/l	03/05/90	GRAB	02:25 PM
Mean	130.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
LEAD	34.000	-	ug/l	03/05/90	GRAB	Ø2:25 PM
Mean	34.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
MERCURY	0.000	*	ug/l	03/05/90	GRAB	Ø2:25 PM
Mean	0.000					
parameter	VALUE	_			Sample Type	
METHYLENE CHLORIDE	240.000	_	ug/l			Ø2:25 PM
Mean	240.000					
parameter	VALUE	_			Sample Type	
NICKEL	286.000	_	ug/l	03/05/90		
Mean	286.000					

<sup>\*</sup> indicates test results below detection limits

## SAMPLING RESULTS FROM ORCHARD HILLS LANDFILL FROM 3/5/90

parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
OIL & GREASE	195.000	_	mg/l	03/05/90	GRAB '	Ø2:25 PM
Mean	195.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
SILVER	0.800	_	ug/l	03/05/90	GRAB	02:25 PM
Mean	0.800					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOLUENE	910.000	_	ug/l	03/05/90	GRAB	Ø2:25 PM
Mean	910.000					
parameter	VALUE		Units	Sample Date	Sample Type	Sample Time
TOTAL PHOS	13.800	_	mg/l	03/05/90	GRAB	02:25 PM
Mean	13.800					
parameter	VALUE	-	Units	Sample Date	Sample Type	Sample Time
TOTAL SUS. SOLIDS	352.000		mg/l	03/05/90	GRAB	Ø2:25 PM
Mean	352.000					
parameter	VALUE	_	Units	Sample Date	Sample Type	Sample Time
TRICHLOROETHYLENE	8.300			03/05/90		02:25 PM
Mean	8.300					
parameter	VALUE				Sample Type	Sample Time
VOLATILE SUS. SOLIDS	62.000		mg/l	03/05/90		02:25 PM
Mean	62.000					
parameter	VALUE	••••			Sample Type	Sample Time
XYLENE	460.000			03/05/90		02:25 PM
Mean	460.000					

<sup>\*</sup> indicates test results below detection limits

#### SAMPLING RESULTS FROM ORCHARD HILLS LANDFILL FROM 3/5/90

. parameter	VALUE	 Units	Sample Date	Sample Type	Sample Time
ZINC	552.000	 ug/1	03/05/90	GRAB	02:25 PM
Mean	552.000				
parameter	VALUE	 Units	Sample Date	Sample Type	Sample Time
рН	9.200	 S.U.	03/05/90	GRAB	02:25 PM
Mean	9.200				

<sup>\*</sup> indicates test results below detection limits

CHAIN OF CUSTODY RECORD AND LAB ANALYSIS REPORT FORM CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES No 5762 SAMPLERS: . PURPOSE OF ANALYSIS: 1415 N. Harrison (Signature) Kalamazoo, Michigan 49007 omphance Monitorn 616-385-8157 DATE/TIME DATE/TIME G ITEM SAMPLE **NUMBER & SIZE** SAMPLE LOCATION, DESCRIPTION R 0 SAMPLE I.D. NUMBER NUMBER OF CONTAINER М М & REMARKS Orchard Hills OHL 06490 2:25 CN. 6+0 Landfill Metals CONU B RECEIVED (Signature) RECEIVED ( (Signature) E/TIME E/TIME Β... ₩. 4 RELINQUISHED E (Signature) ₹/I 13 **RESULT** RESULT ORGANIC COMPOUNDS RESULT GENERAL/CONVENTIONAL TRACE METALS preserva ゴロ **CADMIUM** 10 EPA METHOD 601 рΗ TOTAL CHROMIUM BOD CBOD HEX. CHROME COD COPPER 41 RECENI (Sign) tu LEAD TSS VSS NICKEL ZINC **EPA METHOD 602** NH<sub>3</sub>-N E/TIME 335 0.2 TOTAL P SILVER Na OH ORTHO P MERCURY 10.5 GREASE/OIL BERYLLIUM ΒΥ: CHLORIDE BARIUM 2 RELINQUISHED E (Signature) REMARKS: CN - TOTAL OTHER **CN - AMENABLE** Form 1015

# KALAMAZOO WATER RECLAMATION PLANT INDUSTRIAL PRETREATMENT SAMPLES D.O. & B.O.D.

Test Sample Date Source  Blank (Seeded)  OHLOGY 20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution	ML. 0 3 10 30 75	Bott. No. 36 99 22 660/	8,8 8,8 8,8	88	O Depletion (B-C=D)	Dilution Factor (300 - A = E)	(D × E)	Avg. B.O.D. mg/L	Remarks
Blank (Seeded)  OHLOGY  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution	0 3 10 30	36 99 22	8.8	ļ	0.0		00	0.0	<u> </u>
Test Sample Source Blank (Seeded)  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)	3 10 30	30 99 22 660 U	8.8	8.8	0.0	100	00	0.01	l
Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)	10	99 22 6 bark	8.8	8.8	0.0	111	, <del> </del>		D. D. D.
Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)	30	22 6/a/c	8,8	81		100	0.00	4.09	3/11/90
Date Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)	-	6 box	VC	10.6	0.2	20			Sample Date  Dy 3 5 90
Date Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)	75	un	8.8	0.0	8.8	10	<u> </u>	>1560 - TW	Test Date
Date Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)		171	X.7	00	87	4	26/16	7646	40/11
Date Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)		<u> </u>	<u> </u>	10.0	<del>[ U,                                   </del>	<del>'</del> }	TU		4/4
Date Source  Blank (Seeded)  20:1 Dilution  Test Sample Date Source  Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)			r	<del>_</del>		····	· · ·	<del></del>	
Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source	,	Bott.							Remarks
Test Sample Source Blank (Seeded)  20:1 Dilution  Test Sample Source  Blank (Seeded)	ML.	No.	·						
Test Sample Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source	0	<u> </u>							
Test Sample Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source	3								Due Date
Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source	10								Sample Date
Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source	30								Test Date
Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source	75								
Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source		<u> </u>			LJ				
Date Source Blank (Seeded)  20:1 Dilution  Test Sample Date Source					,				
Blank (Seeded)  20:1 Dilution  Test Sample Date Source		Bott.						1	Remarks
Z0:1 Dilution  Test Sample Date Source	ML.	No.							
Test Sample Date Source	0								
Test Sample Date Source	3								Due Date
Date Source	10								Sample Date
Date Source	30								Test Date
Date Source	75								
Date Source		<b>I</b>			<u>1</u>				
Date Source		Bott.			<del></del>				Remarks
	ML.	No.					•	j	
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20:1 Dilution	3								Sample Date
									Test Date
	3							+	

SAMPLE	E ID			ОН	L 0	064	90			
DISH	D.F.	X	4			Tif	4			,
WT.DIS	SH&SOL.	2350	667			228302				Analyst RJG
WT.DIS	SH	235	579			228	228214			Date Analyzed 3-6-90
MG/L S	SOL	352	88_	352	)V	352	88			
WT.DIS	SH&SOL.	2350	667			228	30E			
WT.DIS	SH&ASH	235	650			228	288			(Tw)
MG/L V	OL.SOL.	68	17	(6Z	)V	56	14			

SAMPL	E ID						
DISH	D.F.						
WT.DI:	SH&SOL.			<del></del>	1		
WT.DI	SH			<del> </del>			Analyst
MG/L	SOL		7				Date Analyzed
WT.DI	SH&SOL.						
WT.DI	SH&ASH			· · · · · · · · · · · · · · · · · · ·			
MG/L Y	VOL.SOL.	L	7			T	

SAMPLE	ID	·						
DISH	D.F.							
WT.DISH	&SOL.		. ::::	. · · .			 	Analyst
WT.DISH								
MG/L·SC	)L							Date Analyzed
WT.DISH	&SOL.						 	···
WT.DISH	l&ash					-		
MG/L VC	L.soL.							

pl

# GREASE AND OIL, FREON EXTRACTION Gravimetric Method

Date Analyzed 3-16-0	9 <u>6</u> s	ample ID #	HL 06490	
Analyst				
Gms. Flask+Residue	163.7724			
Gms. Flask W	103.5987			
Gms. G & O	0.1737	X 1000	= 173.7	Mgs.
Sample Volume in mLs	890	÷ 1000	= .890	L.
Mgs/Volume in L.	173.7/.890	= 195.2	mg/L G & O	
Date Analyzed Analyst		ample ID #		
Gms. Flask+Residue	<del></del>	}		
Gms. Flask			<del></del>	<del></del>
Gms. G & O		X 1000	=	Mgs.
Sample Volume in mLs		÷ 1000	=	L.
Mgs/Volume in L.		=	mg/L G & O	
Date Analyzed	\$a	ample ID #		
Analyst		_		
Gms. Flask+Residue				
Gms. Flask				
Gms. G & O		X 1000	<b>=</b> 1 / Fin	Mgs.
Sample Volume in mLs		÷ 1000	=	L.
Mgs/Volume in L.		=	mg/L G & O	

KAR Laboratories, Inc. 4425 Manchester Road Kalamazoo, MI 49002 (616) 381-9666

#### ANALYTICAL REPORT

To: Kalamazoo Water Reclamation Plant

1415 N. Harrison

Kalamazoo, MI 49007

Attn: Mr. Nasim Ansari

Proj. No.: 900664 Client No.: 1129 Date Activated: 3/06/90 Date Promised: 3/27/90 Date Validated: 3/22/90 Date Reported: 3/22/90 PO#: 45285

Project Desc.: Analysis of one aqueous sample from Orchard Hills Landfill.

#### Dear Client:

Attached you will find test results for Project No. 900664. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/mcr

#### ANALYTICAL RESULTS

To: Kalamazoo Water Reclamation Plant Project No: 900664

Report Date: 3/22/90

Project Desc.: Analysis of one aqueous sample from Orchard Hills Landfill.

Sample No.:900664-01 Rec'd on: 3/06/90 ID: Orchard Hill Landfill, OHL06490, 3/5/90

MDNR Scan 1 & 2 See attached

Unless otherwise noted, test results represent the sample('s) as they were received.

To: Kalamazoo Water Reclamation Plant

Project No.: 900664 Report Date: 3/22/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Sample No.: 900664-01 Rec'd on: 3/06/90 Sample ID: Orchard Hill Landfill, OHL06490, 3/5/90

#### SCAN 1 - Purgeable Halocarbons

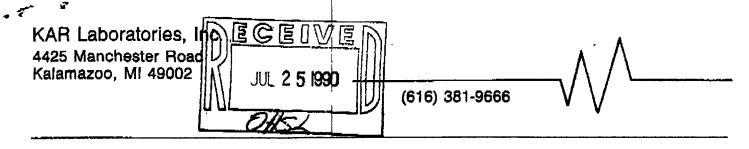
Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	240
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	ND	Tetrachloroethene	ND
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	ND
1,1-Dichloroethane	14	Trichloroethene	8.3
1,2-Dichloroethane	140	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	250	-	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	43	m-and/or p-Xylene	310
Ethyl benzene	130	o-Xylene	150
Toluene	910		

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10

	CN - AMENABLE	CN - TOTAL	CHLORIDE	GREASE/OIL	оятно Р	TOTAL P	NT <sub>3</sub> -N	VSS	TSS	COD	СВОД	вор	F F	GENERAL/CO									\	ITEM NUMBER	CITY OF KALAMAZOODEPARTMENT OF PU 1415 N. Harrison Kalamazoo, Michigan 49007 616-385-8157
	NABLE	AL	)E	OIL										GENERAL/CONVENTIONAL									Orchard Hills	SAMPLE I.D.	CITY OF KALAMAZOO DEPARTMENT OF PUBLIC UTILITIES 1415 N. Harrison Kalamazoo, Michigan 49007 616-385-8157
				-										RESULT TF									041-06490	SAMPLE NUMBER	
			BARIUM	BERYLLIUM	MERCURY	SILVER	ZINC	NICKEL	LEAD	COPPER	HEX. CHROME	TOTAL CHROMIUM	CADMIUM	TRACE METALS									2-40 m/s	NUMBER & SIZE OF CONTAINER	CHAIN OF CUSTODY RECORD AND SAMPLERS: / withy & Mandellerg PUR
														RESULT									3/5/90 2:	m⊣⊅∪	DY RECO
	X °						т						т										2:25pm	m <b>≼</b> – ⊣	RD AI
	OTHER DNK						EPA METHOD						EPA METHOD	ORGANIC COMPOUNDS									H	00 Z U	ND LAB PURPOSE OF
	DNR Scans 102						602						601	OUNDS RESULT									Treatment/o	SAMPLE LO	PURPOSE OF ANALYSIS:  ( Bunplan co )
R	EM	ARK	S:											Т									orange / VOC'S	LOCATION, DESCRIPTION & REMARKS	Monitoring
1 RELIN (Signa 2 RELIN (Signa	ature Lule NQUI	) ber d SHE	<b> </b>	(:   3 7	DAT //g	9! a	30 m	REC	natu Wa	ire)	1		3/6/2	TE/TIME	(Signa	iture)	HED BY	3/6/9/ DA	TE/TIM	M P E R	ECEIVE Supratur Supratur ECEIVE Signatur	008 D BY:	lin	DATE/TIME	No No



#### ANALYTICAL REPORT

To: Orchard Hills Landfill 3378 Hennesey Road Watervliet, MI 49098

13:41

Attn: Mr. Jerry Miller

Proj. No.: 901833 Client No.: 1208 Date Activated: 7/03/90 Date Promised: 7/24/90 Date Validated: 7/24/90 Date Reported: 7/24/90

PO#:

Project Desc.: Analysis of one leachate sample.

#### Dear Client:

08/14/90

Attached you will find test results for Project No. 901833. Please refer to this Project No. if you have any questions regarding this work.

Respectfully submitted, KAR Laboratories, Inc.

William H. Bouma, Ph.D.

Director

WHB/kb

#321-333

KAR Laboratories, Inc.

Page 1

#### ANALYTICAL RESULTS

To: Orchard Hills Landfill

Project No: 901833 Report Date: 7/24/90

Project Desc.: Analysis of one leachate sample.

Sample No.:901833-01 Rec'd on: 7/03/90 ID: Orchard Hills Leachate, 7/3/90

MBAS

Oil and grease

MDNR Scan 1 & 2

Cyanide, total
Cadmium, total
Chromium, total
Copper, total
Lead, total
Mercury, total
Nickel, total
Silver, total

Zinc, total

19,300 mg/L
0.5 mg/L
3 mg/L
3 mg/L
See attached
0.15 mg/L 150
<0.010 mg/L \\_10
0.06 mg/L \\_00
0.29 mg/L \\_290
<0.002 mg/L \\_2
<0.0005 mg/L \\_540
<0.005 mg/L \\_540
<0.005 mg/L \\_500

Unless otherwise noted, test results represent the sample(s) as they were received.

KAR Laboratories, Inc.

To: Orchard Hills Landfill

Project No.: Report Date:

901833 7/24/90

#### PURGEABLE HYDROCARBON ANALYSIS - Michigan DNR Scan 1 and Scan 2

Rec'd on: 7/03/90 Sample No.: 901833-01

Proj. Desc.: Analysis of one leachate sample. Sample ID: Orchard Hills Leachate, 7/3/90

#### - Purgeable Halocarbons

	•		
Bromodichloromethane	ND	trans-1,2-Dichloroethene	ND
Bromoform	ND	1,2-Dichloropropane	ND
Bromomethane	ND	cis-1,3-Dichloropropene	ND
Carbon tetrachloride	ND	trans-1,3-Dichloropropene	ND
Chlorobenzene	ND	Methylene chloride	120
Chloroethane	ND	1,1,2,2-Tetrachloroethane	ND
Chloroform	· ND	Tetrachloroethene	1.0
Chloromethane	ND	1,1,1-Trichloroethane	ND
Dibromochloromethane	ND	1,1,2-Trichloroethane	3.0
1,1-Dichloroethane	11	Trichloroethene	3.4
1,2-Dichloroethane	8 <i>6</i>	Trichlorofluoromethane	ND
1,1-Dichloroethene	ND	Vinyl chloride	ND
cis-1,2-Dichloroethene	47	<del>-</del>	

#### SCAN 2 - Purgeable Aromatic Hydrocarbons

Benzene	13	m-and/or p-Xylene	150
Ethyl benzene	48	o-Xylene	67
Toluene	810	-	

Concentrations are expressed as ug/L. "ND" means not detected. The limit of detection was 1 for all targets except Methylene chloride, which was 10